

# BREAKING DOWN BARRIERS TO COLLEGE

## INCREASING EXPOSURE AND UNDERSTANDING OF POST-SECONDARY EDUCATION: BREAKING DOWN BARRIERS TO COLLEGE FOR PARTICIPANTS IN CAREER AND EDUCATIONAL PROGRAMS

A disquisition submitted to the faculty of the Graduate School of  
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### **Abstract**

Through this improvement initiative, we sought to investigate whether the positive impact of exposure to the college environment can extend to those previously enrolled in a Career and Educational Program (CEP), which is without a traditional college planning counselor. Very few of the participants in CEP schools go on to attend college or obtain advanced certifications. In one CEP, during the 2018-2019 school year, only two out of 150 students went on to continue their education beyond the program (CEP Reports, 2019). We sought to increase the pathways for CEP students to post-secondary education using Tinto's (1993) student integration theory. To increase pathways to college we built a virtual platform to provide guided explanations of the enrollment process as well as provide virtual exposure to a post-secondary educational environment. The participants were asked to view a website then fill out a questionnaire pertaining to the usefulness of this site and their understanding of the processes involved. Through the exposure of these participants to the college environment, we sought to break down some of the barriers to post-secondary education. It must be noted that the intervention methods of this disquisition have changed significantly due to the Covid-19 pandemic and the subsequent limitations on in-person interactions. The original intervention would have provided students with in-person exposure to the college environment, much like the dual enrollment program. To compensate for limitations placed on in person interactions we created a virtual platform to expose participants to the college environment. Although this approach was not ideal, there were benefits. The virtual platform was much more cost-effective, easier to access and utilize and has the potential to reach a wider range of potential students.

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### **Increasing Exposure and Understanding of Post-Secondary Education:**

#### **Breaking Down Barriers to College for Participants in Career and Educational Programs**

On the surface, it may appear as if the United States has achieved the goal of providing access to post-secondary education for all citizens who desire it. Since the passage of the Higher Education Act in 1965, qualified students were provided with options to fund their post-secondary education aspirations with various federal and state loans as well as federal, state, and college grants (Heller & Rogers, 2006). Despite decreased enrollment rates for the fall 2019 semester, overall enrollment in degree-seeking programs at more than 4100 public, private, and for-profit post-secondary education institutions has exceeded 19 million (Snyder, de Brey & Dillow, 2019). Post-secondary institutions' enrollment rates obscure the growing gap between higher and lower socioeconomic status (SES) and college participation rates (Heller & Rogers, 2006). Milner and Lomotey (2014) explain that students living in poverty and children of color disproportionately receive inadequate educational experiences across the United States. Students in poverty are at risk in nearly every step on the path to college, including completing high school, expecting a college degree, acquiring acceptance to college, and understanding the college application and financial aid processes (Milner & Lomotey, 2014; Fitzgerald, 2004; Wells & Lynch, 2012). Additionally, the lack of programs available to help historically underserved students and insufficient research on policies and programs which could benefit this population further exacerbates this problem (Milner & Lomotey, 2014). Milner and Lomotey (2014) contend that more research is needed around the psychological and sociological perspectives of historically underserved populations as well as more thoroughly exploring success stories.

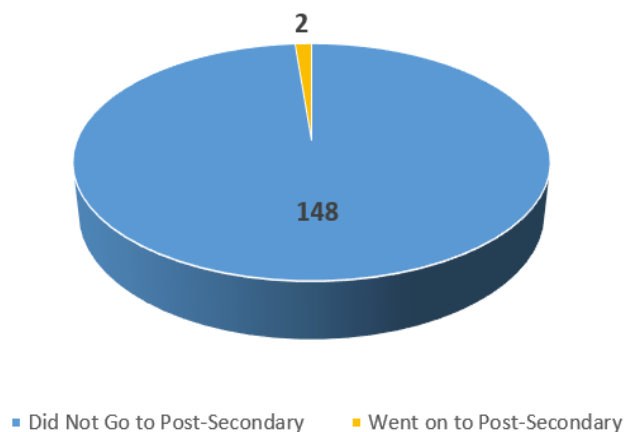
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The Career and Education Program (CEP) is an example of a federally funded educational system, serving students who are economically disadvantaged, struggle academically, and sometimes struggle with social, emotional, or mental health issues. In addition to the core high school curriculum, the courses within CEPs are Career and Technical Education (CTE) focused which often lead to certifications and increase employability. As scholar practitioners, the problem we examined was that very few of these students go on to attend college. In the 2018-2019 school year, as shown in Figure 1, only two out of 150 participants went on to continue their education outside of CEP training. Students do not pursue post-secondary education even though funding options through the Workforce Innovation and Opportunity Act can provide most if not all of the funding required for tuition (CEP Reports, 2019). Historically, CEP students have been systematically denied opportunities to experience college environments prior to the completion of high school.

**Figure 1**

*Number of CEP Students Moving on to Post-Secondary Education in 18-19*

Number of CEP Students Moving on to Post-Secondary  
Education/Training During the 18-19 School Year





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Students of CEPs are very often students of color and from demographics which are under-represented in post-secondary education. Over 62% (CEP, 2021) of CEP students have dropped out of high school, already disenfranchised by the educational system. Almost all would be first generation college students, if they were to attend. These students embody the effects of social reproduction. Social reproduction is summed up in the phrase, “The rich get richer while the poor get poorer.” It explains that embedded social prejudices and biases are the gears that turn our systems and reproduce existing social stratification (Hinchey, 2010). The hierarchical divisions within our society surrounding race, ethnic, and class biases are so ingrained in our society and educational systems that some go by unnoticed. There are subtle but powerful structures in place, including rules, policies, norms, and procedures (Scott & Davis, 2007) which function to maintain an almost feudalistic society. Educational organizations today often function from the rational systems perspective. The highly rigid rational systems surrounding our schools are based on the values of the white, middle-class, Christian, heterosexual norms and culture. The schools with this population get the majority of valuable educational resources. The system is designed to fail those that do not fit into this demographic or are unwilling to be forced into its mold.

There are 58 community colleges within North Carolina specifically focused on low-cost educational opportunities and increasing occupational options (North Carolina Community Colleges, 2019). Two-year community colleges have a more diverse enrollment than four-year colleges and often include students with a variety of educational goals (Duda, 2008). Furthermore, community college students are more

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likely to have external commitments such as work and family (Duda, 2008) which potentially creates additional obstacles to obtaining a post-secondary education.

Dual enrollment programs allow high school students to take post-secondary level courses on community college campuses. Career and technical education (CTE) dual enrollment courses have shown to have a positive impact by serving as an effective transition program into college for many students (Karp & Hughes, 2008). CTE dual enrollment classes in North Carolina can also allow students to obtain advanced certifications in fields such as auto mechanics, real estate, public safety, beauty technician, food service, etc. (North Carolina Community Colleges, 2019). Prior studies have suggested positive outcomes for students in dual enrollment programs because of their exposure to post-secondary education and the efficacy of CTE courses on high school students' college completion and employment rates (Mechur Karp, 2012; Marken, Gray, & Westat, 2013; Taylor & Pretlow, 2015). Dual enrollment and concurrent enrollment provide exposure to an unfamiliar environment that may ease the student's transition and subsequent success. Unfortunately, there is little knowledge of the effect of CTE dual or concurrent enrollment courses on the outcomes for CEP participants.

The Fishbone Diagram also called a cause-and-effect diagram is a tool used in root cause analysis. Created by organizational theorist Kaoru Ishikawa, the fishbone diagram shows potential causes of a problem (Bryk, Gomez, Grunow, & LeMahieu, 2016). Within the fish skeleton, the more substantial bones display categories of potential causes, while the smaller bones show more specific reasons. To narrow our focus, we used Figure 2 to identify four types of systemic causes for the lack of CEP students pursuing post-secondary education. During the early phases of this improvement

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initiative, the Fishbone Diagram looked significantly different. Initially, two of the four main identified causes were: student's family and individual student characteristics.

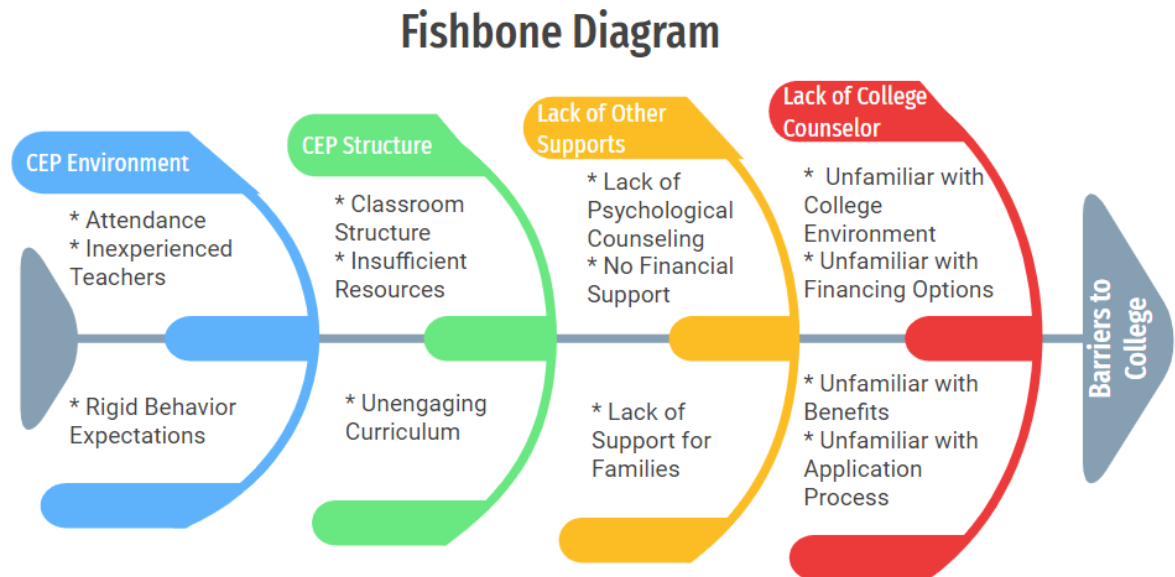
During the disquisition proposal defense, committee member Dr. Jessica Weiler pointed out to us that these causes approached the problem from a deficit ideology. Paul Gorski (2010) describes deficit ideology as a viewpoint that “explains and justifies outcome inequalities by pointing to supposed deficiencies within disenfranchised individuals” (p. 3). Even after several courses at Western Carolina University (WCU) focused on social justice and avoiding deficit ideologies, we still made the mistake of concentrating on the individuals and not the systems creating inequalities. Once our issue of perpetuating deficit ideology was highlighted it became glaringly clear that this was a big problem not just with the Fishbone Diagram but throughout the disquisition draft. We found that we had used harmful terms such as “at-risk” and “non-traditional schooling” repeatedly as well as using the terms in earlier versions of the title. Terms such as “at risk” place negative labels and sometimes blame on individuals as opposed to the institutions that cause the situations. As Aguilar (2020) points out, “Every person and every community has strengths, resources, and resilience, and this label [at-risk] is stigmatizing.” (p.91). Aguilar (2020) goes on to recommend the term, “historically underserved”. (p. 92) For this reason, the Fishbone Diagram, as well as the entire approach to this improvement initiative was reevaluated. In the process of making a concerted effort to remove deficit ideologies from this disquisition, a new Fishbone Diagram was conceived. The new identified causes for such low enrollment into post-secondary school were (a) the structure of CEP schools, (b) the CEP environment, (c) lack of a college counselor in CEPs, and (d) a lack of whole-child support within CEP

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schools. One characteristic of the Career and Education Program students, which falls under the “Lack of College Counselor” on the Fishbone Diagram, is that many have self-reported that they have never had exposure to the college environment and are

**Figure 2**

*Fishbone Diagram Examining Potential Causes of CEP Students Not Attending College*



therefore unfamiliar with it. Through this improvement initiative, as educational scholar-practitioners, we provided these participants with the opportunity to familiarize themselves with the college environment and processes through an online platform. The participants evaluated the effectiveness of this platform as well as analyzed the effects on their plans for college enrollment. However, after repeated informal interviews, it was discovered that a small portion of CEP participants desired to continue their education at a post-secondary educational institution yet were frustrated or confused by the process. Additionally, many of the participants expressed apprehension surrounding what to expect in a post-secondary school setting. We proposed that by exposing participants to the college environment virtually, the improvement initiative would provide familiarity to

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these participants and increase their enrollment rates to post-secondary education.

Participants in the improvement initiative were provided access to a website developed by us to aid in the familiarization with college life and the enrollment and financial aid processes.

### **The Local Context: The History of CEPs and the People They Serve**

The participants of this improvement initiative all previously resided at the location of their Career and Education Program, which is one of 125 CEP centers located in the United States. CEPs are free government-run institutions administered by the United States Department of Labor, which provide education and vocational training to economically disadvantaged young youth and young adults ages 16 to 24 (Department of Labor; CEP, 2015). In addition to their training, CEP students receive free room and board during their time in the program, lasting up to two years. CEPs were established by Sergeant Shriver in 1964 under President Lyndon B. Johnson's Economic Opportunity Act to aid disadvantaged youths (Wallechinsky, 2019). CEPs currently serve approximately 60,000 students annually nationwide (CEP Reports, 2019).

CEPs enhance youth education and employability skills for the job market using a three-tier integrated design. CEP's employment enhancement design focuses on the completion of traditional education expectancies such as a high school diploma, General Education Development (GED) certificate, or the high school equivalency test (Hi-SET) (Wallechinsky, 2019). CEPs provide students with career training in approximately 100 occupational areas, including health care occupations, construction and construction-related fields, culinary arts, business, automobile repair, and other technology-related industries. Students' technical skills training consists of a combination of hands-on skills

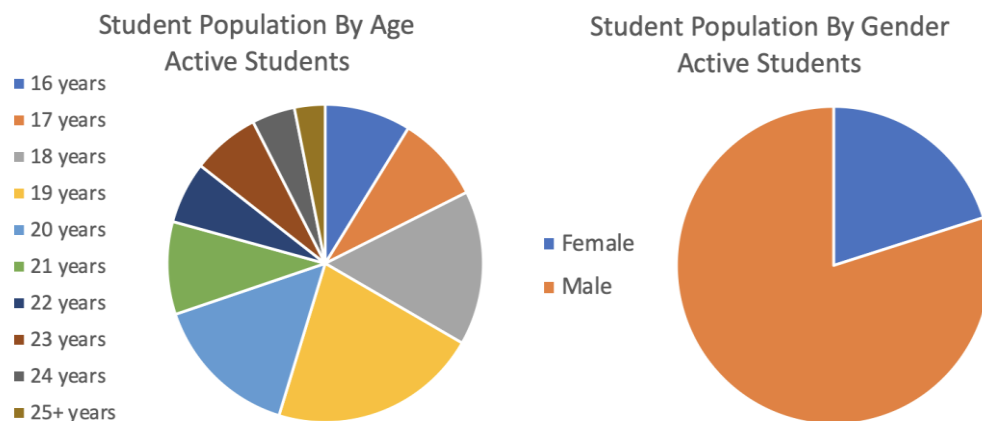
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labs as well as classroom study. All students are required to complete industry-recognized credentialing in their chosen field before completing the program to better their chances of employment after completion of the program.

The pool of prior students from a local CEP were males and females between the ages of 18-24 who remained in contact with Erica Vandermore after their completion of training at the CEP. At the time of recruitment, males outnumber females by 113 males to 24 females (Career and Education Program Demographics Report, 2019). Figure 3 highlights this variance in the previous student population. Figure 3 also shows that 82.38% of CEP students are 18 years of age or older again, making them feasible participants for this study (Career and Education Program Demographics Report, 2019). Although the demographics of CEP participants fluctuate significantly as individuals enter and leave the program, a snapshot from the Career and

**Figure 3**

*CEP Student Age and Gender Demographics*



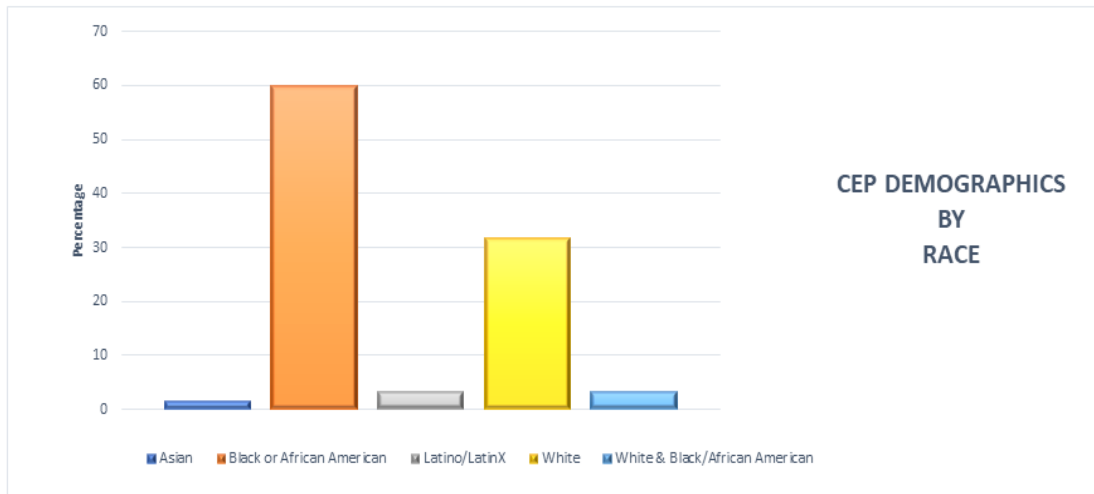
*Note.* Retrieved from Career and Education Program Demographics Report, 2019.

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Education Program (2019) shown in Figure 4 reveals that approximately 60% of students are African American, followed by 31.67% White, 3.33% Latinx, 3.33% White & African American, etc.

**Figure 4**

*CEP Student Race and Ethnicity Demographic Information*



*Note.* Retrieved from Career and Education Program Demographics Report, 2021.

All the students that enrolled in a CEP training program come from low SES backgrounds. One of the requirements of CEP is financial need, meaning that CEPs only admit students who have no other means to attend schooling or job training. Before coming to a CEP, most students lived at or below the poverty line. In essence, these individuals face obstacles within their lives and learning experiences that people from more privileged backgrounds rarely encounter.

### **Theory of Improvement: Decreasing Post-Secondary Barriers**

When working towards positive change, a theory of improvement can help guide the initiative. A theory of improvement identifies changes that should lead to improvement as well as the accompanying actions (Spaulding & Hinnant-Crawford,

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2019). The theory of improvement used in this initiative is largely based on Vincent Tinto's Theory of Student Retention. Demetriou and Schmitz-Sciborski (2011) explain that Tinto's 1975 landmark student integration model started an important scholarly conversation around retention in post-secondary education. Tinto identified three reasons students leave post-secondary education. The three reasons are academic difficulties, the inability to set occupational goals, and a failure to become integrated into college (Nicoletti, 2019). Tinto's model states that students need integration into academic and social systems to be successful in post-secondary education (Tinto, 1993).

Our theory of improvement holds that exposing CEP participants to a college environment through a virtual platform will remove the individual barrier of unfamiliarity with the college environment, and more of these prior students will report wanting to attend the college. This improvement initiative aims to increase the understanding and familiarization with the college enrollment process of previously enrolled CEP students. As improvement scholars, we believe that by increasing familiarization, these participants will be better equipped to continue their academic careers. To accomplish this goal, we will expose previously enrolled CEP participants to the college environment through an online platform.

To illustrate theories of improvement outcomes, a driver diagram (Figure 5) can be beneficial. A driver diagram is another approach to describing a theory of improvement (Langley, Moen, Nolan, Nolan, Norman, and Provost, 2009). A driver diagram is a tool used by members of an organization to identify and systematically map out the goals as well as the actions needed to accomplish those goals (Spaulding T & Hinnant-Crawford N, 2019, pp.30). The driver diagram is also a visual representation



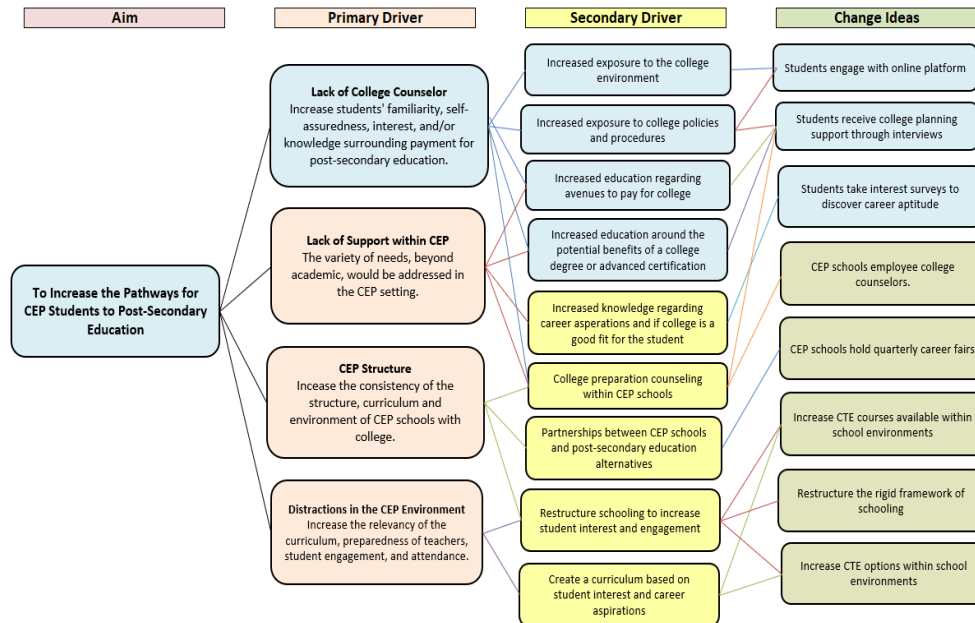
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used to organize possible improvement changes within an organization (Bryk et al., 2016). In this figure, the focus of the improvement initiative is highlighted in Figure 5 in blue. The improvement aim is to increase the pathways for CEP participants to post-secondary education. The primary driver surrounds elements around college and career planning not always present in CEP schools. The primary driver is to increase participants' familiarity, self-assuredness, interest, and knowledge surrounding postsecondary education. Secondary drivers include (a) increased exposure to the college environment; (b) increased exposure to college policies and procedures; (c) education regarding avenues to pay for college; and, (d) education around the potential benefits of a college degree or advanced certification. The change interventions to accomplish these drivers include, (a) participants engaging with the online platform created by us; (b) receiving college planning support through conferencing/interviews with us; and, (c) discovering their career aptitude.

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**Figure 5**

*Driver Diagram Displaying the Improvement Plan*



### Literature Review: Previous Research

The students of CEPs historically have had limited access to dominating factors and influences that would promote their pursuit of post-secondary education. In this definition, access is the external factors that either encourage or deter a student's path to post-secondary educational institutions. Access can be as simple as a guidance counselor (also called a college counselor within this study) helping with a college entrance application or providing direction to financial aid applications. On the surface, it appears like access to post-secondary education would be available to all who wish to attend. However, as Bragg, Kim, and Barnett (2006) point out, barriers to post-secondary education can include various forces such as discrimination, the ever-increasing cost of tuition, and lack of exposure to the expectations and standards that come with continuing one's education. According to Heller and Rogers (2006), most of the barriers to post-

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secondary education are due to educational and social stratification. The limitations described in this literature review include financial, programmatic, and socio-cultural. We explored the financial barriers or the inability of low SES populations to pay for post-secondary education. We additionally examined programmatic and academic limitations, such as a lack of proper preparation or alignment with the K-12 curriculum (Cabrera & La Nasa, 2001). Within the realm of socio-cultural barriers, this section describes Tinto's (1993) Student Integration Model. This literature review also explores the benefits of dual enrollment to expose students to the college environment, as this was the plan for intervention before Covid-19 limited in-person learning.

### **Financial Barriers to Post-Secondary Education**

There have been substantial changes in the financing of post-secondary education in the United States over the last two decades. According to Heller and Rogers (2006), these changes include increasing tuition rates while at the same time decreasing financial support at the state and national levels. Fewer grants and more loans are being awarded, putting the burden on families (Heller & Rogers, 2006). Grants had historically been given based on the financial need of the student; however, today, they are awarded based strictly on academic merits with no regard to the students' level of need (Heller & Rogers, 2006). These changes are significantly impacting students of low-income as well as other historically underrepresented students in post-secondary education (Heller & Rogers, 2006; Wells & Lynch, 2012).

### **Primary and Secondary Barriers to Post-Secondary Education**

Throughout the United States, the goal of attending college is prevalent among high school students. As of 2003, 90 percent of high school sophomores aspire to attend

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college, and 70 percent expect to obtain a four-year college degree (U.S. Department of Education, 2003). Unfortunately, only 62 percent of these students will enroll in college, and only half of those will return for a second year (Bragg, Kim, & Barnett, 2006). Howe (1998) calls these students the "forgotten half" because society offers them little to no options for upward mobility. College graduates experience a variety of benefits over those who did not attend post-secondary education, including high annual earnings (Howe, 1988; Rosenbaum, 2001).

Primary and secondary education is riddled with systems that are harming marginalized populations and ultimately lead to social reproduction as these students are kept out of college. It starts when students enter school for the first time and realize that very few teachers may look like them. In fact, 82% of public educators are White and male teachers of color only make up 2% of the workforce (US Department of Education, 2016). It continues at a young age as historically underserved students are grouped by perceived abilities and/or disproportionately labeled as learning disabled. It happens as African American boys are disproportionately referred to the office for disciplinary reasons and then given harsher consequences than other students (ACT, UNCF, 2015). Black students are nearly two times as likely to be suspended as white students (ACT, UNCF, 2015). This system carries on as teachers of historically underrepresented students maintain low expectations of them. According to Gershenson, Holt, and Papageorge (2015), research has shown systematic bias and low expectations in White teachers of African American students. Furthermore, schools that serve primarily marginalized students usually have more novice and/or less qualified teachers (US Department of Education, 2016). This harm to students historically underrepresented in

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college continues as they are kept out of Advanced Placement (AP) or Honors level courses. Students of color represent 38% of the student body in the United States but only 29% are enrolled in at least one AP course (US Department of Education, 2016). Finally, 1.6 million students attend a school that has a law enforcement officer but does not have a school counselor. In fact, the student-to-counselor ratio within the United States 491 to 1 (US Department of Education, 2016).

Another reason so few high school students pursue college is the lack of alignment between secondary and post-secondary education. Many students are unable to access college because their K-12 education did not prepare them for post-secondary schooling (Lewis & Overman, 2008). There are several reasons why this is the case, including a gap between the academic expectations of high schools and college (Venezia & Jaeger, 2013). The difference may affect students' standardized test scores and can be a gatekeeper to college, or they may enter, find themselves ill-prepared, and therefore leave. The adoption of Common Core State Standards, a set of learning objectives adopted by most states in 2013, aided in creating alignment between high schools and colleges (Achieve, 2013). Unfortunately, since 2013, approximately a quarter of the states have either downgraded their participation or withdrawn completely, including North Carolina in 2017 (Schwalbach, 2018).

Initiatives to align education could better prepare high school students for the rigor of college. There is a great deal of research that explores the link between secondary and post-secondary curriculum (Lewis & Overman, 2008). Regrettably, the research to implement better alignment between the high school and college curriculum is often not

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adopted fully or correctly (Lee & Bryk, 1988). Furthermore, these efforts do not appear to benefit historically underserved students (Lewis & Overman, 2008).

### **Tinto's Integration Theory**

There are multiple barriers to students being able to integrate into the post-secondary educational environment fully. Tinto (1993) developed an explanatory, longitudinal model of the persistence/withdrawal process, known as the Student Integration Model, based on his student integration theory. The student integration theory focuses on the degree of fit between the academic environment and social systems. Tinto's model suggests that dropout rates correlate with students' integration into an academic institution. It implies that students bring with them their life experiences and realities such as socioeconomic status, previous school experiences, and familial attitudes and beliefs to their chosen institution. Tinto's model further insinuates that students' lived experiences influence their integration and commitment to both completing the academic program as well as their commitment to the institution itself. Tinto theorized that the integration of students combined with their commitment to graduation and choosing the correct area of study influence the student's success in post-secondary education. Tinto's model further suggests that there is a positive correlation between high integration, commitment to the field of study, and academic success as well as higher completion rates.

The application of Tinto's student integration theory has been widely supported by four-year post-secondary institutions where students usually reside on campus; however, there is not as much known regarding the relevance of Tinto's theory to community colleges (Rockey & Congleton, 2016). Social and academic integration does

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look different between community college and university students; however, Rocky and Congleton (2016) argue that it is important to succeed in both. Santos-George (2012) found that Tinto's theory still holds true in community colleges, but only if the student exhibited a strong commitment towards the goal of completion. Rocky & Congleton (2016) maintain that instead of focusing on why students leave, community colleges should work to identify equity gaps and create population specific programs to increase integration. Tinto's theory of student integration has also been widely utilized as the rationale behind programs developed specifically for integrating marginalized students into the post-secondary academic and social environment, especially during their first year (Rockey & Congleton, 2016).

Tinto's theory of student integration is problematic in that it focuses very much on the individual and not the systems. It ignores how the attributes and experiences of students are built upon systems that create and perpetuate inequalities and social reproduction. It also must be pointed out that this theory does not acknowledge the systems that have caused harm to historically underrepresented students. This harm exists especially within K-12 education where students are labeled, tracked, and told repeatedly both explicitly and inexplicitly that they are less than and not good enough. The result of all of these years of harm is a lack of self-efficacy which impacts a student's ability to feel successful and motivated, especially in a foreign environment, such as college.

### **Barriers to Integration into Post-Secondary Education**

A college campus has an atmosphere that often mirrors that of the dominant culture. A lack of belonging can contribute to a student's choice not to enroll in college (Bourdieu, 1984). Bourdieu (1984) explored the paradigm of cultural reproduction, which

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is the inability to change one's social class. He focused on habitus, which are deeply ingrained habits, accomplishments, and traits that everyone possesses due to life experiences (Bourdieu, 1984). He also highlighted cultural capital, for example, education, speech, dress, etc. as a barrier to mobility (Bourdieu, 1984). Both of these forms of social and cultural capital hinges on one's current social status and subconsciously impose limits on what one believes one can achieve (Bourdieu, 1984). Social and cultural capital 'deficits' can cause students from low SES backgrounds to avoid post-secondary education (Bourdieu, 1984). However, programs that expose students to the college environment can potentially build a student's social and cultural capital facilitating a transition in habitus (Bourdieu, 1984).

### **Dual Enrollment as a Pathway to Break Down Barriers**

There are programs available that help to break down some of the barriers to post-secondary education for students. Various accelerated learning programs enable high school students to receive both high school and college credit as well as gain exposure to elements of post-secondary education (Wachowiak, 2015). According to Kim (2006), the Academic Pathways to Access and Student Success project (APASS) identified nine academic pathways to accelerate student learning. Dual credit and dual enrollment are two of these pathways (Kim, 2006) and are among the most prevalent across all fifty states (Wachowiak, 2015). Policy for these programs varies among states, although forty-five states actively support these pathways (Bragg, Kim, & Barnett, 2006). Only twenty-nine states intentionally reach out to historically underserved student populations, such as low SES, specific racial and ethnic groups, low-achieving, first-generation, and rural students (Bragg, Kim, & Barnett, 2006).



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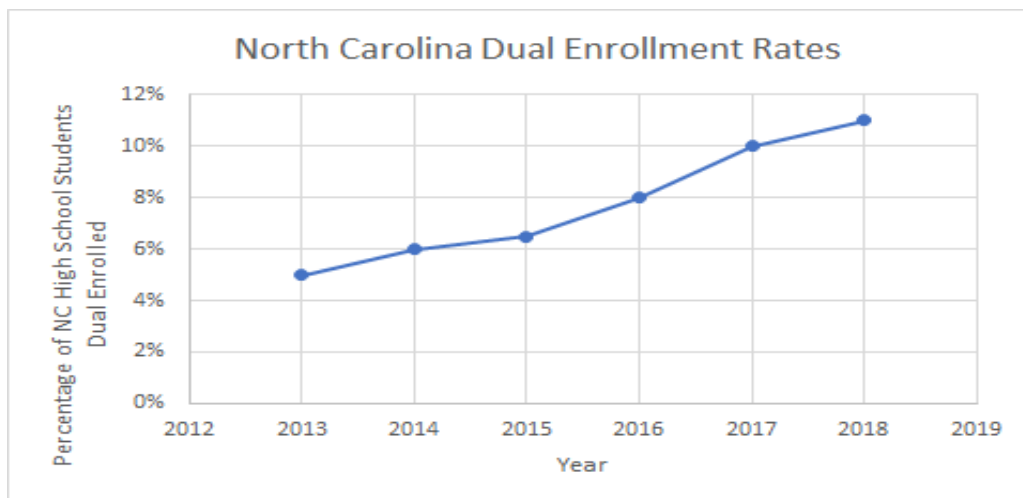
Dual credit, dual enrollment, and concurrent enrollment are three similar pathways not usually offered in CEP schools. According to Taylor and Pretlow (2015), the dual credit track allows students to receive both high school and college credit for college-level classes. Dual or concurrent enrollment shows that a student is taking both high school and college courses; however, the student may not receive high school credit for their college classes (Taylor & Pretlow, 2015). Concurrent enrollment can sometimes show that a student is taking and earning credit for a college-level course offered at their high school (Taylor & Pretlow, 2015).

Alternative pathways to post-secondary education can be confusing; however, some are gaining in popularity. Dual credit and dual enrollment pathways are rising nationwide as well as in North Carolina, as is shown in Figure 6 (Granados, 2019).

According to Kleiner and Lewis (2005), during the 2002-2003 school year, 98 percent

**Figure 6**

*North Carolina Dual Enrollment Rates*



*Note.* Reprinted from North Carolina Center for Public Policy Research, by Granados, 2019.

## BREAKING DOWN BARRIERS TO COLLEGE

of two-year post-secondary institutions enrolled high school students in their courses. This same year, 71 percent of public high schools in the United States made dual credit classes available to their students, with approximately 1.2 million students taking advantage of the pathway (Kleiner & Lewis, 2005). However, the data shows that this option is more available in larger urban high schools, which suggests an unequal distribution of opportunities depending on demographic, geographic, and economic variables (Bragg, Kim, & Barnett, 2006).

### **Improvement Methodology**

It is important to point out that due to the quarantine surrounding Covid-19, this improvement initiative had to be modified significantly. The original goal was to expose CEP students to a post-secondary environment by moving their automotive classes to the local community college campus. However, as the state moved to remote learning, this was not possible, yet we still wanted to provide this population with increased exposure to post-secondary education. For this reason, the decision was made to transition to a virtual platform that prior CEP participants could access and learn more about college in the simplest language possible. The short-term goal of the improvement initiative was to create a virtual website to increase participants' awareness of the post-secondary educational environment while improving their confidence in their ability to succeed in this academic setting. The long-term goal of this initiative was to share the success of this site with CEP schools and have a positive impact beyond this one site. By introducing CEP participants to a college environment with the support of interviews/conferencing, barriers to post-secondary education can be broken down.

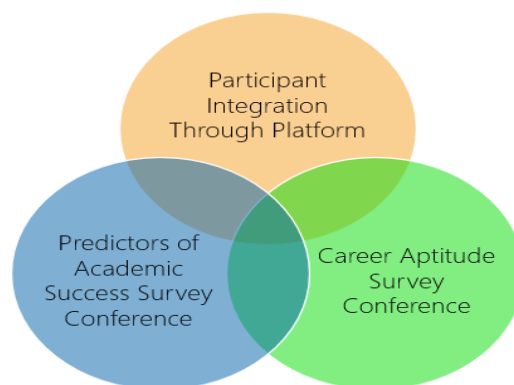
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After participants have been able to review the virtual platform, they will also benefit from conferences with us. During these interviews/conferences, the knowledge gained from career aptitude and interest surveys will be used to guide participants in their plans for the future. The following sections look more closely at the three areas we explored. These variables (Figure 7) are participant integration into post-secondary education through the virtual platform, predictors of post-secondary academic success, and career aptitude as a guide for the program of study.

These three areas were identified based on Tinto's Theory of Student Retention. Tinto identified academic difficulties, the inability to set occupational goals, and a failure to become integrated into college as reasons students leave college (Nicoletti, 2019). Predictors of academic success survey conferences helped us determine if the participants might struggle academically in college, which was the first point in Tinto's theory. Tinto also highlighted the inability to set occupational goals, which was addressed through the career aptitude survey conference. Finally, participant integration through the virtual platform addresses Tinto's integration into college.

**Figure 7**

*Three Variables Focused on Post-Secondary Education Integration*



### **Participant Integration into Post-Secondary Education Through Virtual Platform**

Participants benefit from opportunities to gain familiarity and comfort with the college environment. Recent research suggests that having exposure to the college environment can help students earn better grades in high school, increase enrollment in post-secondary education, and have greater rates of persistence in post-secondary education (U.S. Department of Education, 2016). Additional research suggests that students from low socioeconomic backgrounds benefit from exposure to the college environment in much the same way as their peers of higher socioeconomic backgrounds (U.S. Department of Education, 2016).

Most high school students hope to go on to post-secondary schools; unfortunately, many have not had access to the necessary knowledge and skill sets to be successful in that environment. As previously mentioned, there are a variety of elements that affect college readiness, including peer relationships, parental influences, and preparedness for the rigor of college (Venezia & Jaeger, 2013). Exposure to the college environment is one intervention that shows promise in helping to prepare students for college (Venezia & Jaeger, 2013).

Students need to choose courses that lead to a career that is a good fit for them. In addition to Tinto's integration model, past research has suggested vocational interest and aptitude are strong yet often ignored predictors of retention and performance (Iddekinge, Putka, Roth, & Lanivich, 2011). While some of the earliest research focused on employee retention and performance, vocational interests apply to students pursuing education or training towards a specific vocation. Following meta-analysis research suggests that

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students are more likely to matriculate when matched with programs aligned to their vocational interests (Nye, Su, Rounds, & Drasgow, 2012). Additionally, Nye et al. (2012) examined the validity of professional interests in predicting academic performance. Their findings support earlier research by John Holland (Holland, Gottfredson, & Naziger, 1975), which suggested that congruence between the student and their field of study would be a useful tool for predicting academic performance.

The website we created lays out in simple-to-follow instructions how to transverse and overcome many of the obstacles facing prospective students that are unfamiliar with the process (Appendix E). The website additionally includes videos offering step-by-step instructions to obtaining financial aid as well as videos explaining the payment options and different types of aid available to students. In order to provide a greater familiarization with the college environment, various videos and links are provided on the site describing what the student can typically expect in the college and community college environment.

### **Predictors of Post-Secondary Academic Success**

In this improvement initiative, we looked for interest and compatibility in school as a predictor of academic success. This data was drawn from questions within a biodata assessment known as the Student Behavior and Experiences Inventory (SBEI). This test was developed based on significant psychometric work (Oswald, Schmitt, Kim, Ramsay, & Gillespie, 2004) and has shown to be valid for predicting academic performance in previous research (Schmitt et al., 2007; Schmitt, Keeney, Oswald, Pleskac, Billington, Sinha, & Zorzie, 2009). The biodata assessment measures 12 dimensions of college student performance, which were identified through a content analysis of university

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websites describing the traits they wished to cultivate in students (Oswald et al., 2004). Items chosen for the scales determine lived experiences, interests and hobbies, background, and other information about the assessed construct (Oswald et al., 2004). Later research decreased the 12 dimensions to seven based on the validity for predicting students' performance and outcomes (Prasad, Showler, Schmitt, Ryan, & Nye, 2017; Sinha, Oswald, Imus, & Schmitt, 2011). These seven dimensions include knowledge, continuous learning, social responsibility, leadership, perseverance, adaptability, and academic values (Oswald et al., 2004). The use of this model will predict participants' determination to attend secondary education. We obtained a copy of Oswald's initial biodata assessment by emailing the professor. At the time of publication, the College Board owned/used these measures, but as of January 2020, Oswald could share them (F. Oswald, personal conversation, January 25, 2020). For this improvement initiative, we utilized questions 13-15 (Appendix A) from the dimensions of continuous learning, perseverance, and adaptability. Questions were kept as short and as simple as possible to allow for all reading levels. Additionally, a five-level Likert scale was used that ranged from Strongly Disagree, Disagree, Neither agree nor disagree, Agree, and Strongly Agree to maintain consistency and simplicity for the participants.

### **Career Aptitude as a Guide for the Program of Study**

When exploring career paths, there are personal aptitudes that can increase one's qualifications or fit within that field. Using questions from a career aptitude test based on the theory of vocational choice known as Holland's Code or Holland's Theory, we will determine participants' career aptitude and interests (Holland, 1959). John Holland's vocational choice theory is one of the most widely researched and applied approaches in

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the field of career and college planning (Holland, Gottfredson, & Naziger, 1975).

Secondary and post-secondary institutions also extensively use it to assist students in finding career options. Holland's theory proclaims that a person's career choices build upon various personality traits (Holland, Gottfredson, & Naziger, 1975). Holland's Theory proposes that people seek out careers orientated to their personality types (Holland, Gottfredson, & Naziger, 1975). Holland developed his theory using multiple disciplines to guide his work, such as social and personal psychology, self-perception theories, and stereotype theories (Holland, Gottfredson, & Naziger, 1975). In 2004, Fouad and Mohler explored the validity of the interest study across five racial and ethnic groups as well as gender differences. Overall, there were minimal differences based on race and/or ethnicity but meaningful differences based on gender (Fouad & Mohler, 2004). The difference in occupational interests between males and females makes sense when one acknowledges that gender is a set of roles, behaviors and rules which are socially constructed (Berger & Luckman, 1966) Kendi (2019) compares gender to a performance that we consciously and subconsciously accept and play. According to Berger and Luckman, "all human activity is subject to habitualization,...habitualization provides the direction and specialization of activity" (Berger & Luckman, 1966, p.54)

Holland's theory of vocational choice uses a self-assessment to divide people into two or three personality types and subsequently match these types into careers that coincide with their aptitude or preferences (Holland, Gottfredson, & Naziger, 1975). Holland's theory posits the more significant the similarities between the personality types and the characteristics of the workplace, the higher the potential that the prospective employee will experience greater satisfaction, thus increasing longevity and achievement.

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Holland's theory identifies six personality types: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C) (Figure 8). Each personality type has specific occupations that are well suited for it, and some combinations of types have identified jobs appropriate for that combination.

**Figure 8**

*Career Aptitude Types*



*Note.* Reprinted from <https://commons.wikimedia.org/> (2020).

For this improvement initiative, we explored how many of the prior automotive CEP students scored high in the realistic type. Individuals with the realistic personality type like to be hands-on and enjoy working with machines and tools (Career Key, 2018; Career Research, 2020; Holland, 1973; Holland, 1975). There are several different versions of this RIASEC interest survey available through test publishers and the U.S. Department of Labor (Armstrong, Allison & Rounds, 2008). Some argue that the RIASEC types are not enough to represent the full range of occupational interests and that prestige and gender types confound them (Deng, Armstrong, & Rounds, 2007). However, Holland's theory offers a strong connection to what we are measuring while withstanding the test of time in the vocational field of research. In this improvement



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initiative, we have utilized questions from the Holland Code (RIASEC) Career Test. This original test (Appendix B) consists of 42 agree or disagree statements. Each statement on the test aligns with a specific personality trait (Questions 1-12). To create the Improvement Initiative Survey (Appendix A), we chose two questions from each personality type, and participants answered based on the same five-level Likert scale.

### **Formative Evaluation of Improvement Methodology**

We used this final disquisition to report the entirety of this improvement initiative. A disquisition is a formal problem-based discussion that addresses and analyzes an identified problem of practice within a particular organization (Lomotey, 2018). Once a problem of practice has been identified, we will create an intervention aimed at improving or correcting the identified problem of practice using evidence-based improvement science techniques (Lomotey, 2018). According to Crow (2019), improvement science is a method borrowed from the business and healthcare industries and adapted to the educational field as a means to enhance "school leaders' capacity for institutional and organizational improvement" (p. 3). We continue to use improvement science as a framework to guide their efforts of defining problems and ultimately implementing interventions with the intent of improving a problem of practice (Hinnant-Crawford, 2019). To accomplish our sought-after improvements, we continually referred to feedback received during the PDSA cycles to modify and enhance the quality of the final intervention product. The results of the intervention are then analyzed and presented in the final disquisition as a requirement of degree conferral. The disquisition is similar to the dissertation of a Ph.D. program in that it requires hours of research and will ultimately become part of a broader discussion in the scholarly community.

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### **Design Team**

A variety of people contributed to and worked towards the design of this improvement plan. As Hinnant-Crawford (2020) reminds us, “improvement science is a collaborative endeavor” (p. 164). A design team is a group of practitioners and scholars that have a strong working knowledge of the organization, which unite to design improvement interventions (Hinnant-Crawford, 2020). The design team collaborates to create surveys, analyze data, and evaluate progress at the end of each PDSA cycle. The design team, much like the direction of this disquisition, has changed to accommodate the developing and ever-changing needs of the intervention. Hinnant-Crawford (2020) shared that this is not unusual in improvement science. The original design team included the Works Program Officer of the CEP, Kenneth Barton and Cecile Duvall. We consulted and planned with Mr. Barton for the logistics of participants’ transportation to and from the community college. Mr. Barton, additionally, was to oversee the implementation of the intervention to ensure all protocols were followed as well as ensure the wellbeing of participants. Cecile Duval, the former Continuing Education Specialist, planned the utilization of classroom space at the community college as well as aided in the scheduling of the pending classes. Chris English, the former Vice President of Continuing Education, provided input as well as the permissions and access needed to implement the original intervention.

The original design team was reconfigured for various reasons including the three aforementioned members moved to different positions, institutions, and retirement. Additionally, it became clear that the original intervention could no longer proceed as designed due to the impact Covid-19 had on the improvement initiative. As the

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intervention evolved into a virtual platform, we realized that we were no longer the people best suited to design the new platform. However, the lessons learned during that first phase did impact the work that followed after Covid-19 forced the discontinuation of the original intervention.

The new design team was smaller in size due to the unique circumstances surrounding the intervention. Notes and documentation taken during the first design meetings while approval was still valid were utilized to inform content in the new virtual format. Erica Vandermore, the CEP automotive instructor and doctoral student at WCU, connected participants previously enrolled in a CEP with the virtual platform and web-based surveys. She also participated in virtual conferences/ interviews. Amy Wagner, a previous school-based dual enrollment coordinator and doctoral student at Western Carolina, participated in virtual conferencing/ interviews with participants. Both Amy Wagner and Erica Vandermore designed and created the virtual platform with the aid of a web hosting service. Lastly, a copyright attorney was consulted to ensure that we could legally include various explanatory videos on the platform under the fair use act section 107.

### **Plan-Do-Study-Act Cycles**

The path towards reaching improvement goals is a process that can involve a great deal of trial and error. According to Langley et al. (2009), "the Model for Improvement is made up of a set of fundamental questions that drive all improvement and the Plan-Do-Study-Act (PDSA) Cycle." (p. 23). Langley et al. (2009) report that these three questions are: "What are the scholar-practitioners trying to accomplish? How will the practitioners know that a change is an improvement? What changes can be made

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that will result in improvement?" (p. 24). Figure 9 is a visual representation of this PDSA cycle. The paragraphs below will explore these questions.

**Figure 9**

*Plan, Do, Study, Act Visual*



*Note.* Retrieved from Miller-Anderson (2019).

This improvement initiative first focused on the question: "What are the scholar-practitioners trying to accomplish? We attempted to increase participants' familiarization and understanding of post-secondary educational environments and processes thus increasing their interest in applying to post-secondary education. To explore the question: "How will the practitioners know that a change is an improvement?" We measured the participants' intent by analyzing survey data and interview/conference transcriptions from participants asking if they are interested in enrolling in college. Furthermore, we were able to determine if the participant's knowledge and understanding of the enrollment process increased after the intervention through interviews and post-

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intervention surveys. Before beginning this improvement initiative, approval was obtained from the WCU Institutional Review Board (IRB). We also obtained consent forms (Appendix C) from participants.

Improvement science seeks to do as the name would imply, improve something using a scientific methodology. With that goal in mind, the question of what changes can be made that will result in an improvement is asked of us at the end of each improvement PDSA cycle. However, we found that throughout the entire process, the answer of what we could change to provide improved results changed repeatedly. In fact, the original design of this improvement changed dramatically due to external factors. Michael Maxwell (2017) describes external turbulence as the confusion brought about by unpredictability and change. Our journey was riddled with external turbulence as we worked to complete this improvement initiative. This project did not follow the traditional linear path but instead weaved, curved, stopped, and restarted as external factors such as job changes and global pandemics forced the initial plans and designs to change.

The primary factor driving the change was the virus known commonly as Covid-19. The outbreak of Covid-19 in the United States in March of 2020 forced these scholars to overcome a myriad of external turbulence beginning with access and location. At the beginning of the improvement initiative, the virus caused a nationwide shutdown of almost all education facilities. The shutdown largely impacted the students of the CEP that were the original participants and focus of this intervention. With the closing of in-person schooling, access was lost to the classes and spaces that had originally been intended for use as well as the ability to bring the participants to the community college

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campus. The loss of access to the community college halted the original plan of immersing the participants in college life to aid in the familiarization process. Precautions due to Covid-19 additionally halted plans for meetings with the students by college staff to inform them of enrollment policies and procedures. Additionally, all students of the CEP previously resided on the campus of the CEP, making access to the students possible through one of us who was also an instructor on the CEP campus. At the onset of the pandemic, the decision was made to send all CEP students back to their homes in order to prevent the spread of the virus on campus. The evacuation of campus happened quickly, with only four hours between the decision to evacuate and the execution of the evacuation. This left no time to communicate with the participants or to set up alternate means of communication with the original participants. Coinciding with the evacuation was the community college's administrative decision to pull the instructor/scholar from the CEP campus, which further limited access to the participants through official means as accessing participants' records and contact information is not possible outside of the CEP network. At this point, we attempted to contact the original participants through other means. Social media, namely, Facebook became the primary form of initial contact with participants. We decided to use social media, Facebook specifically because it is one of the most widely used social media platforms in the country which increased the chances of finding our original participants much more likely. While the participants' full names were known previously, we had not thought to document the phone numbers or home addresses of participants for later contact. The oversight of documentation was due in large part to all of the original participants living at the site of the intervention and being in contact with Erica Vandermore daily. As previously mentioned, contact with the

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participants as well as access to their contact information was abruptly ended due to the evacuation of the center. In years past, we would have consulted a phone directory to find the participants contact information and simply called them. However, due to the overwhelming usage of cellphones as the primary phone combined with the fact that cell phone numbers are not listed in a directory this method would not have been useful. Having the participant names and corresponding ages allowed us to do a name search on Facebook. The majority of participants that appeared in our search used a picture of themselves on their profile, making accurate identification possible. In the rare instance that a profile with the corresponding name did not have a photo to verify the identity, we examined the page for identifiers such as age, location, and acquaintances that were known to have attended CEP. This method was proving to be successful as we were able to make contact with 12 of the 15 original participants. However, this success was short-lived due to additional external barriers. From cutbacks due to Covid-19, Erica Vandermore was terminated from the position of instructor thus changing the agreement and relationship with CEP. The change in relationship between Erica Vandermore and the CEP required that additional authorization be granted by the administrators of CEP to include active CEP students in this intervention. A meeting was established between the scholar and the new Center Director of CEP to acquire additional authorizations and to explain the nature and design of the intervention. The explanation of the intervention was necessary due to the replacement of the previous Center Director. Additionally, we had no previous relationship with the new Center Director and as such, had no social capital with which to rely on. Ultimately the meeting was unsuccessful. The new Center Director was personable and receptive to the idea of the intervention, however, she stated that she

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did not feel comfortable granting access to the students of CEP despite the previous authorization given by her predecessor. The Center Director reasonably claimed that as she was very new to the position, she did not feel she could grant access without gaining authorization from the Department of Labor, Department of Agriculture, and the Department of Forestry as those three government departments provide the oversight of the center. The Center Director was willing to request authorization from the three departments and did provide us with contact information to seek authorization ourselves but did note that the approval process was likely to take an unknown yet extended period of time. Due to the time constraints of this intervention, we decided that sampling from the pool of CEP students was not advisable or possible at that time. This resulted in 100% participant mortality also known as attrition. Participant mortality occurs when a significant number of participants drop out or are removed from a study due to external factors (Creswell, 2008). It was at this time, due in no small part to the loss of site usage, access to participants as well as repealed authorization, the original disquisition was abandoned.

Once again, we regrouped and began the work of developing an intervention. We decided that to move forward during quarantine, the intervention must exist in a virtual format. It was decided to return to the original intervention intent of providing access and familiarization to college but to modify the design to fit with the current reality of Covid-19 restrictions. We then modified the sample pool to include prior students of CEP with which Erica Vandermore had maintained a relationship with upon their completion of the program. The sample pool was limited to those participants to maintain the focus of providing access to students of similar demographics of the original design. By limiting



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the sample pool to prior students of CEP that additionally met the criteria for inclusion, we were left with 3 participants. The lower sampling size resulted in the decision to change from a quantitative analysis as originally intended to a qualitative analysis.

In order to achieve the goal of familiarization in a virtual environment, the platform had to be created. We did attempt to find a website that would meet the needs of the participants but was unsuccessful. The decision was then made to take on the daunting task of creating a website that met the needs of students as well as being user friendly and easily accessible. The decision to build the required platform was not a decision that we made easily. We did not have any background in web design which instilled great trepidation and uncertainty into both of us. Recognizing that we were not equipped with the skills or knowledge needed to build a virtual platform, we sought out and found a web hosting service which enabled us to design and create the desired platform which we entitled, “First Steps to Success: Transitioning to College Made Easy” (FSTS).

To accomplish this new plan for improvement, participants interacted with the virtual FSTS platform and held conferences with us to explore pathways in line with their aptitude. At the beginning of PDSA cycle one, participants reviewed the virtual platform focused on the college environment, the benefits of post-secondary education, and financing. The site also contains a virtual Improvement Initiative Survey (Appendix A) to help researchers determine participants’ career aptitude based on questions from Holland’s career aptitude survey as well as their disposition for academic success as based on questions based on the biodata predictors of academic success. Participants then completed a Website Review Survey (Appendix D) reviewing the usefulness of the site.

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When permission was granted, we used that data to conference with participants. During this conference, they discussed aspects of the website and survey results.

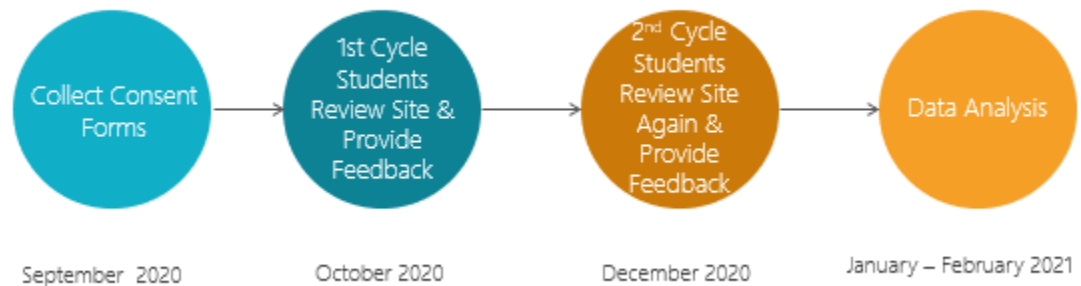
After the first PDSA cycle, we made changes to the website based on participant feedback. At the beginning of the second PDSA cycle, participants again reviewed the site and completed the Website Review Survey (Appendix D). There were also the PDSA cycle two interviews/conferences following up on website feedback and reassessing the participants' feelings toward post-secondary education. The cycle two interviews were conducted to determine if the intervention of interacting with the platform was proving to be useful. Test-retest reliability is a procedure commonly used in quantitative research (Creswell, 2015) which examines scores stability at different times to determine reliability. What we did in this instance was similar to the test and retest methodology except we were looking for instability. By that we mean that we hoped to find that knowledge as it pertains to post-secondary education had increased as a result of interacting with the platform. To determine if an increase of knowledge occurred, we relied on self reporting during the second interviews. The PDSA cycle two interviews were additionally conducted to determine if the participants felt that more changes were needed to improve the effectiveness of the platform.

As shown in Figure 10, there were two eight-week PDSA cycles. The first cycle was conducted from September 1, 2020, to October 31, 2020, and the second cycle was from November 1, 2020, to December 31, 2020. The use of two cycles allowed us to reevaluate the intervention to ensure the appropriateness of the design as well as adjust for any unforeseen problems that occurred.

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**Figure 10**

### *Improvement Initiative Timeline*



### **Participants**

The participants of this improvement initiative were three former CEP students. The results from the improvement initiative did not provide generalizable or reliable results due to the small number of participants. This initiative was intended to make a positive impact on its three participants, showcase a supplement to college and career planning, as well as present a plan for similar practitioners on how this work might be achieved.

As educational scholar-practitioners, we used purposive sampling from the pool of prior students who previously attended a Career and Education Program and had remained in contact with their former instructor. Of the prior students, they had to have met three criteria. Selected students had to have been previously enrolled in the CEP. This criteria was based on the intended target population for the intervention. While this intervention does have the potential to serve potential users outside of this demographic of students, the intent of the intervention is to increase pathways for historically underserved populations that have been systematically denied access to resources necessary to attend post-secondary education. Students had to be age 18 or older due to

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legal and ethical restrictions regarding minors' participation. Additionally, many of the minor students previously enrolled in the program are wards of the state, making consent from a guardian nearly impossible to attain. Lastly, participants had to have obtained or have been in the process of obtaining their G.E.D or High School diploma. The reasoning behind this last criteria was to empower those participants that are in a position to continue their education. We believed that it would be discouraging or disheartening to participants that wished to enroll but were not able to enroll in post-secondary institutions due to education requirements.

As the scholarly practitioners, we received approval from WCU's Internal Review Board (IRB) to ensure the rights and welfare of all human participants are protected. Protecting the participants' rights included making sure all subjects fully understand their participation in the study and potential risks. For this reason, all participants completed a consent form (Appendix A). The consent form informed participants of their rights, explained the purpose of the study, outlined what they would be asked to do, and explained potential risks. For purposes of confidentiality, we did not include personally identifying information in the final report or notes viewed by any person outside of the research team. Pseudonyms were used in the unlikely event that the reporting necessitated a reference to a specific participant. The pseudonyms given to the three participants were: George, Howard, and Barry. We kept a log of the pseudonyms with the corresponding identities in a secure location.

### **Balancing, Process, Primary Driver, and Outcome Measures**

A variety of real-time data was collected during this improvement initiative. Balancing measures looked for unintended consequences, while process measures were

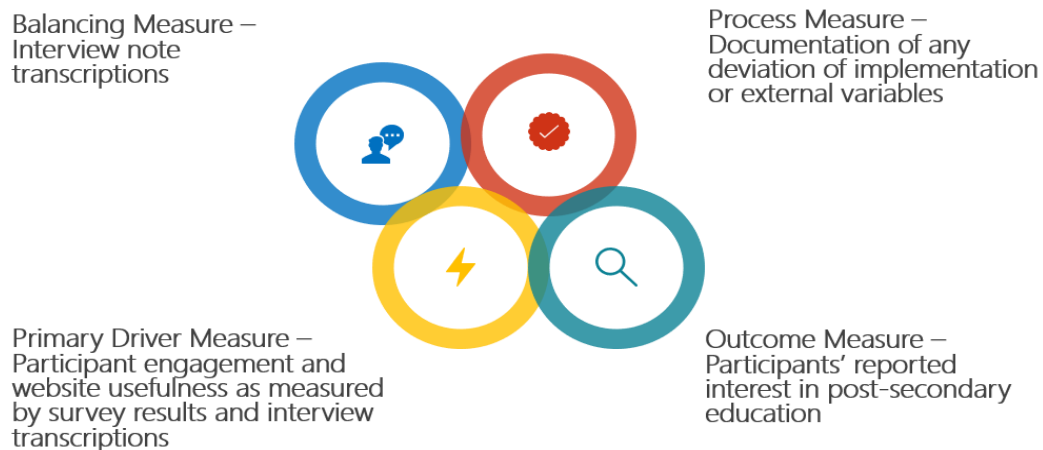
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monitored to ensure the implementation plan was followed with fidelity. The primary driver measures were analyzed throughout the improvement initiative to help guide future revisions to the plan. The outcome measures of this improvement initiative explored whether an improvement occurred.

Throughout the improvement PDSA cycles, we analyzed balancing, process, primary driver, and outcome measures (Figure 11). These practical measures allowed us to examine the links between the theory of improvement and outcomes increasing the validity and reliability of the initiative. As Bryk et al. (2016) explain, with this system of measurements in place, “hypothesized causal links in a team’s working theory of practice can be examined” (p. 138). Combining the PDSA methodology with a system of practice measures provides “a strong empirical infrastructure” (Bryk et al., 2016, p. 139).

**Figure 11**

### *Practical Measurement to Evaluate Improvement*



*Note.* Adapted from Bryk et al., 2016.

The process measures of this improvement initiative were in place to ensure that the improvement plan was being executed, as stated in the plan. These measures considered the fidelity of the implementation of the ideas (Bryk et al., 2016). Process

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measures encompassed documentation of any deviation from the improvement plan. The measures included verification of fidelity to the timeline, survey implementation, and interviews.

The system of procedures which would become the process measures for this improvement initiative began three months before PDSA cycle one in September of 2020. The procedures were weekly, documented meetings between us. During these meetings a running agenda was maintained in Google Docs to record discussions surrounding the planning and implementation. These meetings served a variety of purposes including monitoring fidelity to the improvement plan, exploring unintended consequences and documenting the process. To maintain safety and security, only pseudonyms were used in this document. These meetings were focused on a variety of topics including the review of survey submissions. Plans would be made to send reminders to participants as well as follow up with them afterwards. We would maintain fidelity to the timeline as best as we could by making plans to schedule interviews as quickly as possible after the participants had completed the survey.

Process measures also included discussions surrounding Covid-19's impact on the timeline. We were cognizant of the impact it had on participants' access to computers and the internet. Luckily, all of the participants had the necessary resources and this had no impact. Nonetheless, the concern was monitored.

During these weekly meetings, balancing measures were also reviewed and documented. Whenever working towards a change, one must be mindful of unintended effects. We used balancing measures to observe how the system was perhaps impacted negatively by the improvement initiative (Bryk et al., 2016). Balancing measures used

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included interview transcription notes. These notes were monitored to determine if the improvement initiative was making unintended changes or consequences.

Before PDSA cycle one, we made a list of possible unintended consequences. These included participant frustration in using the website, undue stress or pressure put on the participants, and/or added confusion. These were intentionally looked for as the study progressed. As we moved through the PDSA cycles, we were also aware that there could be consequences that we had not predicted. For this reason, an open mind was kept as the study progressed and the question of unexpected outcomes was raised during weekly meetings.

The only frustration that arose regarding the website was during cycle one and it was minimal and non-harming. It was these frustrations that led to changes and improvements being made to the website, which will be explained as we explore the primary drivers. We were also careful during interviews to not make the participants feel pressured to apply to college or as if they were “less than” if they chose not to do so. Because of the pre-existing relationship between Erica Vandermore and the participants, this did not become a problem. It is evident from the relaxed nature of the transcriptions that participants at no time became defensive or became heightened in emotions. We also made sure to move on if the participant said they were not interested in applying to college and did not try to follow up with any type of persuasion. During the interviews, the researchers also remained cognizant of any misunderstandings the information on the website might produce. No misunderstandings appeared, but participants did ask follow up questions to help clarify parts that they did not understand. These misunderstandings

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were usually around financial aspects of college. When reviewing possible unintended outcomes that we had not predicted, none occurred.

The primary driver measures were analyzed throughout the improvement initiative to help guide future revisions to the plan. Primary driver measures served as a formative assessment at the end of both PDSA cycles to predict the link between the intermediate outcomes and targeted goals (Bryk et al., 2016). Driver measures included participant engagement in the website and survey data. Lastly, we used data gathered during the interviews to ascertain the fit of the intervention. The following paragraphs dive deeper into the primary driver/ formative assessment data.

This improvement project explored the effectiveness of immersing students in a virtual college environment to increase their interest in post-secondary educational institutions. Very few of the participants in CEP schools go on to attend college or obtain advanced certifications. In one CEP, during the 2018-2019 school year, only two out of 150 students went on to continue their education beyond the program (CEP Reports, 2019). This immersion approach was based on Tinto's (1993) student integration theory. The student integration theory focuses on the degree of fit between the academic environment and social systems.

Three participants, who formerly attended the CEP, were enlisted to engage with the virtual platform of the website. The data surrounding each individual was consolidated, including their Website Review Survey and conference/interview transcriptions to look for trends. The website analysis data was the primary formative assessment and proved to be invaluable to the further development of the website. In



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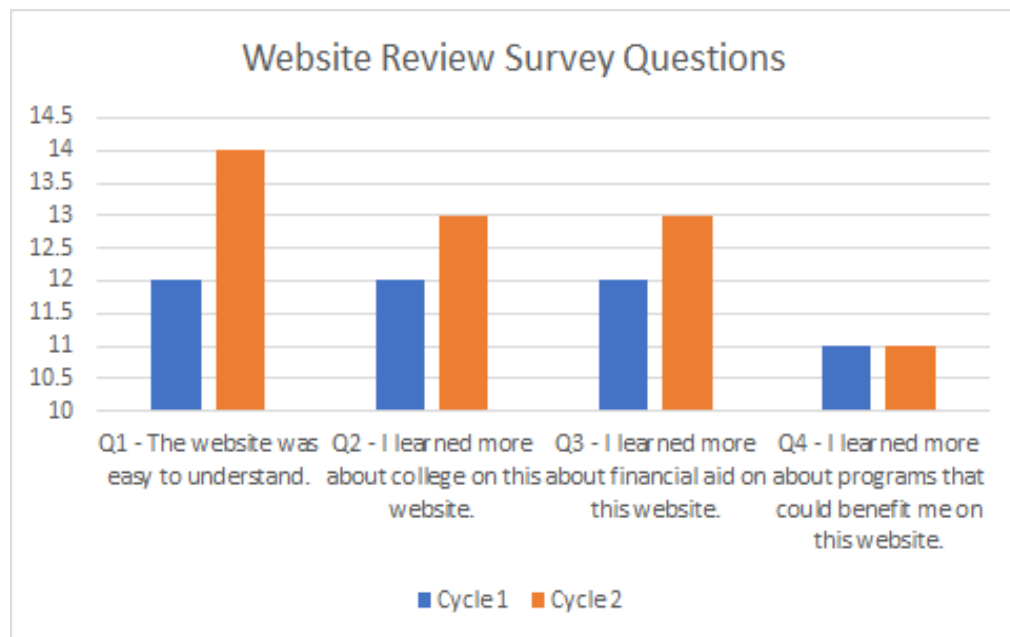
other words, the formative assessments were: participant engagement and website usefulness as measured by survey results and interview transcriptions.

During each PDSA cycle, Website Review Survey data was collected to determine if the website was helpful and if improvements needed to be made. To better understand the website review survey data collected during the first and second PDSA cycle, the Likert scale was quantified with Strongly Disagree counting as one, Disagree equaled two, Neither agree nor disagree was three, Agree counted four points, while Strongly Agree was five. Quantifying the data allowed us to look for trends of improvement between PDSA cycles as well as effectiveness, overall. As Figure 12 shows, participants were better able to understand the website after the changes were made during cycle one. The overall scale of the answers had the potential to range from zero to 15. However, given the small number of participants, a scale of 1-15 did not adequately reflect the variance. Because of this, the scale of Figure 12 was modified to range from 10 to 15 to better show where the variances occurred.

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**Figure 12**

*Website Review Survey Questions 1-4*



This data showed us that the website was most successful in being easy to understand, especially after changes made at the end of PDSA cycle one. There was a two-point growth in this area between PDSA cycle one and two and an overall score during the second cycle of 14 out of 15, indicating a high level of comprehensiveness. The data also reveals that the virtual platform shares information about college and financial aid and that this improved by one point from 12 to 13 during the PDSA cycle two survey. Overall, the website scored a 13 out of 15 in both areas during PDSA cycle two showing there is adequate information in both of these areas. The survey also revealed that the greatest area of growth for the virtual platform is describing college programs that could benefit CEP students. This question scored an 11 out of 15 during both PDSA cycle one and two with no improvement. The website could be improved

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upon by adding more about potential programs and certifications that students could benefit from.

In addition to collecting data via an online Website Review Survey (Appendix D) on the impact of the virtual platform on these three participants, we also used the data collected during interviews to improve upon the website. The pseudonyms given to the three participants during the interviews were: George, Howard, and Barry. The first round of data accumulated from the participant interviews was the most useful. There was valuable information from the participants about what was most useful within the virtual platforms. The videos were mentioned by two of the three participants as being particularly helpful. George stated:

“I mean I liked the videos. They would probably definitely help.” (George, personal communication, 2020).

Based on interview transcripts, we took this to mean that George believed the platform would be of assistance to those wishing to continue their education.

The participants shared valuable feedback about how the website could be improved. The initial versions of the website included standard information such as general descriptions of the enrollment process, types of financial aid available, and videos describing the differences between community colleges and four-year universities. After conducting the participant interviews, it became clear that the website required in-depth yet easy to understand content and guidance to be effective. During one interview, it was revealed that one informational video embedded in the website contained language and terms that would not be easily understood by those with limited or no previous exposure to college. An example of this came in the form of a statement and question posed by one

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of the participants, “I didn’t really like the video talking about the people and places you need to know about... like what is a registrar anyway?” (Barry, personal communication, 2020). This feedback led to a review of and ultimately the elimination of that section. We had not predicted that collegiate terminology comprehension would be a barrier to users of this site. To rectify these barriers, the video in question was removed from the platform. In addition to removing the content in question, we reviewed all previously added content to ensure the information was clear and concise as well as being easily understood by those without previous exposure to collegiate jargon. Despite our best efforts, it was not possible to provide content completely free of collegiate language, to overcome this barrier an additional section was added to the platform. The new section is dedicated solely to collegiate terms and the accompanying descriptions as well as the role that they play in college life. Furthermore, while working to eliminate the language barrier, another shortcoming of the virtual platform was discovered. At the time of this disquisition, the virtual platform is presented in English only. By not creating an avenue for speakers of other languages, we are excluding a large demographic of potential users. This oversight, while unintentional, adds to a system of inequality and undermines the intent of this intervention, which is to provide all aspiring college students with the tools they need to succeed. At this time, changes to the platform to address this issue have not been made. However, we are exploring ways to make the platform multilingual.

The participants felt that while the information regarding financing college was useful, more information was needed to be provided in regards to the long term impacts of financial aid options.

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“I like the site, I mean, yeah it’s cool but I would like to see like more about how the money stuff affects me in the long run. I mean like, what happens if I can’t repay it right away? Does that like affect my credit score and stuff” (Howard, personal communication, 2020)

The initial interviews fueled revisions made to the website which better conform to the needs of participants and future users of the website. As a result of the surveys and interviews, multiple changes were made. One such change came in the form of a two minute video discovered on YouTube and created by the Department of Education. The financial aid video is in the form of a cartoon and lays out in a detailed yet easy to comprehend way the various types of payment option. The financial aid video explains the differences between grants, scholarships, and student loans. The financial aid video then goes on to explain the intricacies of each of the payment options as well as a brief overview of possible requirements for eligibility. The video also discusses the types of circumstances that qualify for loan deferment. An additional video was added to the “Next Steps” section that lays out the consequences of defaulting on student loans, such as wage garnishment and withheld tax returns. A final element added to the virtual platform provides a brief tutorial describing the importance of credit scores and how credit scores work. It should be noted that we attempted to keep the length of all informational videos added to the platform to under 30 minutes. We made this decision in an attempt to avoid overwhelming participants or bogging them down with too much information at a time. When the information could not be condensed to 30 minutes, the videos were split into sections to allow the viewers a point to take a break or come back at another time.

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Many other additions were made between PDSA cycle one and two. Additional videos were added after Barry suggested that the website did not go far enough in describing what college life was really like. This information led to the addition of videos on the website that explain college life, as the persons in the videos experienced it. However, it must be acknowledged that every individual will experience college life differently and the videos may fall short of actually experiencing the environment in person.

The cycle one interviews revealed the need for greater access to information regarding the college enrollment and financing process. The participants all expressed confusion surrounding the college application, enrollment, and financing process. Two of the three participants stated that they had not received guidance or counseling in regards to post-secondary education either in previous educational institutions or at home. One student did recall speaking with a guidance counselor while in high school about the possibility of attending a trade school after finishing high school but claims that the information was vague and unhelpful. It was additionally discovered throughout the initial interviews that there was some confusion regarding the differences between community colleges, four-year colleges, and trade schools.

The outcome measures of this improvement initiative explored whether an improvement occurred. Outcome measures are a summative evaluation of the improvement process to assess if there was progress towards the improvement initiative's ultimate goals (Bryk et al., 2016). The outcome measure was increased interest in enrollment into post-secondary education as measured by interviews and is explored in the “Summative Evaluation of Improvement Methodology” section of this paper.

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### **Summative Evaluation of Improvement Methodology**

As scholar practitioners, the problem we examined was that very few of these students go on to attend college. The summative evaluation in this improvement initiative was the participant's reported desire to attend a post-secondary educational institution. The summative assessment additionally compiled information pertaining to the participant's understanding of the enrollment process and familiarity with the college environment. An analysis of participant's survey responses as well as semi-structured interviews was performed to identify trends. Interviews were the primary measure of the summative evaluation. Results from the survey also did not provide generalizable or reliable results due to the small number of participants. So while a quantitative methodology was deployed to garner information, the primary source of information gathered for the summative evaluation of interest in post-secondary education was from the interviews. The qualitative methodology we utilized was one-on one interviews which is "the most time consuming" (Creswell, 2008, p. 217), however, utilizing the one-on-one data collection methodology allowed us to utilize open-ended questions so that the "participants can best voice their experiences unconstrained by perspectives of the researcher" (Creswell, 2008, p.216) or other participants. The open-ended questions in addition to the one-on-one interview process allowed us to gain in depth information that is not always possible with quantitative methodologies.

The summative evaluation was primarily focused on qualitative interviews; however, the information gathered from the Website Review Survey questions provided some insight into determining if the website increased participant's interest in college. One question out of the ten, question five, focused on collecting this information.

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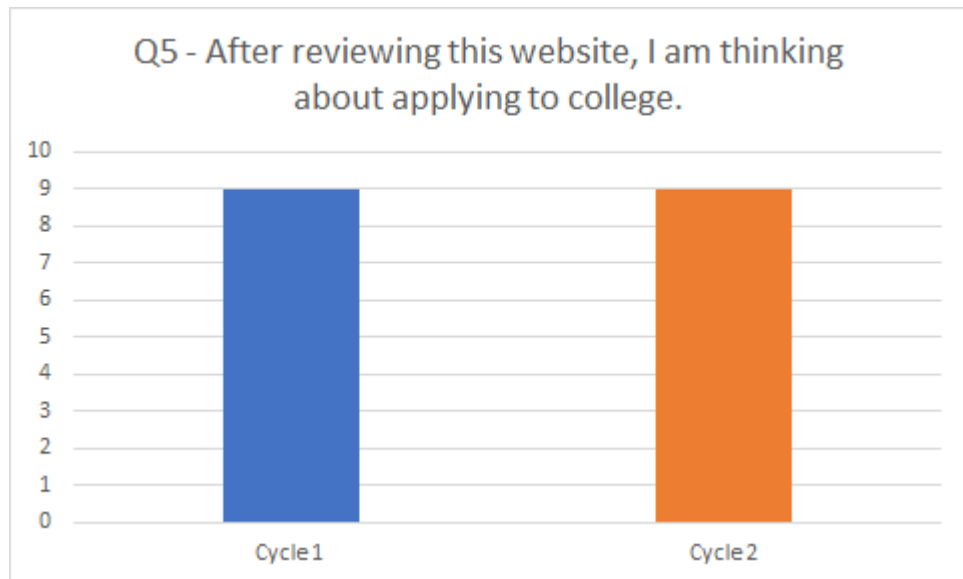
Question five within the Website Review Survey review was the first piece of data reviewed to help us determine whether the website increased the participants' interest in post-secondary education. Again, the Likert scale was quantified to help detect changes between PDSA cycle one and two. As Figure 13 shows, the survey data did not reveal any change in the participants' desire to apply to college. The lack of increased desire could be attributed to various factors including alternate plans such as participants' goals to enter the military. The results could also have been impacted by Covid-19 and the financial as well as emotional burden it has put on people throughout the country. One participant did in fact register to take classes at a post-secondary educational institution. The participant downplayed his recent enrollment by claiming that he was just taking a couple classes inferring that he was not as of yet seeking a degree. The participant did imply that familial pressure was influential in his decision. The participant further asserted that the website did not factor into this decision to enroll in college courses. However, the participant confirmed that he utilized the platform to assist him with navigating the financial aid process. At this time it is not possible to determine conclusively if the participants willingness to enroll into a post secondary institution was fueled at least in part by his increased understanding of the financial aid and enrollment process gained through usage of the virtual platform.



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**Figure 13**

*Website Review Survey Question 5*



As the educational scholar-practitioners, we then turned to the semi-structured conference/interview data to gain more detailed information regarding the participants personal experiences and views regarding the interest in post-secondary education. We additionally desired information regarding specific shortcomings of the virtual platform as well as ways to improve upon the platform that can only be garnered from interviewing the participants.

The improvement initiative was designed to utilize semi-structured interviews and survey results (Creswell, 2008). Therefore, we intentionally selected participants that would “help people learn about the phenomenon and give voice to individuals who may not otherwise have been heard” (Creswell, 2008, p. 214). The semi-structured interviews served the purpose of exploring CEP participants' own perceptions regarding post-secondary education. The data was not necessarily intended to be generalizable.

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The decision to use semi-structured interviews was based on the exploratory nature of this study. Exploratory interviews are often used in the social sciences for qualitative research purposes or to gather clinical data (Creswell, 2008). While semi-structured interviews do not follow a strict format they do generally follow a predetermined guideline or loose structure to keep the interview focused on the subject of the research. The semi-structured nature of the interview provides a greater chance for discovery or insights that is not always possible with the more rigid structured interview format. By allowing the interview to follow a more natural trajectory as the conversation unfolds, previously undiscovered details can be explored. Semi-structured interviews are an excellent way to collect open-ended data while at the same time diving deeper into participants' thoughts and feelings. It is also a better vehicle for discussions into personal and possibly sensitive topics. Furthermore, it creates a relaxed and comfortable environment for the participants.

It is also important to point out that there was already a positive relationship between the three participants and Erica Vandemore, their previous instructor. This social capital allowed for a more open conversation than would have been possible with a stranger. It also added a personal component to this initiative that would not have been possible with just a website by itself. The conferences provided a sounding board for the participants, but they also sent a message to them that they were important, valued, and someone cared. This is a key element of this project.

The semi-structured interviews focused on college planning with no pre-planned questionnaire, and transcriptions being taken. Interview transcriptions were coded to highlight commonalities (Olsen, 2012). We utilized the inductive thematic content

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analysis to avoid biases and establish the overarching impressions of the transcription data (Olsen, 2012). The analysis of the transcripts allowed for common themes and patterns to materialize organically rather than approaching the data with a predetermined framework. To accomplish this goal, transcripts were first annotated labeling relevant words, phrases, sentences, and/or sections with codes (Olsen, 2012). These codes aided in identifying patterns and organizing information. We then worked to conceptualize the data aligning it with research categories and subcategories (Olsen, 2012). Commonalities and overlaps were also considered between categories. The coding phase was completed through the process of structural coding, in which the initial raw data, taken through a transcription of the interview process and survey results, was labeled (Olsen, 2012). The structural coding of the raw data developed into the initial three labels which were assigned as Enrollment Process Comprehension, Financing Options Comprehension, and Education Institution Comprehension.

### **Barry**

Barry is a 24-year-old man that has an easy-going yet quiet nature. Throughout his interviews, Barry was very soft-spoken which resulted in the scholars asking him to repeat himself on multiple occasions to ensure clarity. Barry graduated from the CEP automotive repair program in 2020, spending approximately two years in CEP. Barry is currently unemployed and living in another government-run facility that is dedicated to helping young men and women find permanent employment and housing. Barry was unable to find suitable housing or employment after his completion of CEP and transitioned directly to the current program when his allotted time expired within CEP. Barry was raised in Georgia by his mother and father and shared that his father was very

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abusive when he was growing up. Barry's parents are now divorced and Barry stated that his mother has moved to France making it impossible for him to reside with her. Barry additionally confided that he has no desire to reside with his father due to the traumatic abuse that he suffered as a child and teen. Despite his demure mannerisms and quiet nature, Barry appeared excited to be part of this initiative stating:

“I think it's kinda cool what you are doing. I like being able to help you build the website” (Barry, personal communication, 2020).

Barry did not assist in the website creation but was instrumental in the continued development of its contents through his feedback and evaluation of the site. During the interviews, Barry was very critical of his previous experiences with the college counseling he received in previous educational institutions. Barry's main complaint was that the information he received was not useful to him, “I went to a regular high-school, it was a college prep high-school, so they told us stuff about college and stuff but none of it really helped” (Barry, personal communication, 2020). Overall Barry did find the website useful and stated that “if I decide to go to college, I will use the college application links, I hate writing the same stuff over and over so I think those will save me time” (Barry, personal communication, 2020). At the time of the interviews, Barry was ambivalent about furthering his education but did not rule it out as a possibility in the near future. When Barry was informed that his Improvement Initiative Survey results suggested that he would do well in college his face brightened a little and he displayed a slight smile. Barry appeared to be happy about the results but attempted to play it off as if this was not a surprise to him stating “Well I always been good at school, people just don't know cause I don't brag about it” (Barry, personal communication, 2020). Barry's ambivalence

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towards continuing his education appeared to be due to his current living and employment situation. Barry's reasoning was that he needed to "find a job and get an apartment" (Barry, personal communication, 2020) before he could attempt to further his education. Barry did convey that he was in the process of studying for two Automotive Service Excellence (ASE) exams and that he may "take some ASE courses" after he found a job to help him with the exams. When the topic of the RAISEC test was discussed, Barry found the results of Realistic, Investigative, and Enterprising to be accurate. Barry believed that the results confirmed his pursuit of a job in the automotive field and ultimately owning his own shop was the right decision for him.

### **Howard**

Howard is a 20-year-old man that was raised by his grandparents and entered the CEP at their urging. Howard graduated from the CEP in 2020 after completing his training in automotive repair and receiving his high-school diploma. He is currently single, proclaiming that he is too young to get serious and has no children. Since leaving the CEP, he has moved in with his father, a retired Naval Captain with whom he has a strained relationship and stepmother. Howard is currently employed at an oil change franchise. During the first conference/interview with Howard, he shared some of his confusion surrounding college debt.

"My uncle was talking to me about that stuff and he was saying that like if I mess up paying back loans it could like make it hard to buy a car and stuff, he also said that like the government can take my paycheck and stuff if I miss payments. Is that true? Like can the government really take my s\*\*t if I miss a payment?"  
(Howard, personal communication, 2020)

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Howard's admitted confusion allowed us the opportunity to explain and clarify some misunderstandings. It was through this organic conversation that misconceptions arose and could be alleviated by us, as the scholar-practitioners. It was also during the first conference that Howard shared his confusion around taking a class without being part of a formal program of study.

“Like I didn't know that I could just take classes for anything without like going to school forever. Like if I want to learn how to rebuild a transmission, I can just take a class for it and then be done.” (Howard, personal communication, 2020)

Howard did not want to commit to a full two or four-year program. If he decided to go to college it would be to get an additional certification.

Howard explained that the website helped him learn more about post-secondary education. When asked directly if he would want to go to college during the first PDSA cycle of interviews, Howard explained that the website didn't make him want to go to college more but it did help him understand the processes better.

During the PDSA cycle two interviews, Howard discussed the changes made to the website with us, such as the credit score section, based on his feedback. Howard also mentioned during this conference that he had utilized the FAFSA information on the virtual platform and has made preparations to take classes at the local community college. He shared:

“Yeah, I'm going to take a couple classes online and see how it goes. It got my dad off my back for a little while.” (Howard, personal communication, 2020)

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We reviewed Howard's Improvement Initiative Survey results during the second PDSA cycle interview. He had scored high in realistic, which was a good match for his chosen occupation in the automotive field. He was not surprised by these findings.

Howard additionally scored high on the last three questions which indicate that he will do well with the rigor of college. Upon hearing this, he said:

“Really! That’s cool but like kinda surprising. I haven’t always done great in school, which you know.” (Howard, personal communication, 2020)

It should be noted here that despite the participant's proclamation of not doing well in school, he is a very bright young man that did quite well in the automotive training program when he put forth the effort. When Erica Vandermore had him as a student, he was a very fast learner that excelled at most tasks. The only difficulties the participant encountered at that time was due to his attention being focused on female peers and not on the work at hand. The participant, in the opinion of this scholar, is very intelligent but views his short distraction from his studies as a failure on his part. The participant has additionally declared that he was a “bad kid” in the past and appears to have a great deal of remorse over this. We have only ever known this participant to be polite, helpful to his peers, and kind with a slightly off-color sense of humor.

### **George**

George is a 23-year-old male with a very pronounced stutter. The participants' stutter becomes more obvious when he is frustrated or nervous which sometimes results in difficulty understanding him and adds to his frustrations thus increasing the severity of his stutter. George graduated from the CEP automotive repair program in 2019 after only eight months having previously acquired his high school diploma prior to joining CEP.

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The participant is recently unemployed and living at home with his mother but is seeking employment with local automotive dealerships. Upon first meeting, the participant appears quiet and aloof, yet he becomes very talkative and personable once his comfort level increases. The participant is easily distracted and often became distracted during our interviews. We had to steer the interviews back to the subject of the website and college enrollment on more than one occasion. It did become clear throughout the interviews that George had no desire to return to school as described in the following interview excerpt:

“I mean like no, not really. I definitely think like I am probably going to join the military to fly and whatnot.” (George, personal communication, 2020)

He goes on to say:

“I don’t want to do anymore school stuff. I just want to like do my Army training so I can like be done and work and stuff.” (George, personal communication, 2020)

He elaborated on his plans for the Army, sharing:

“I mean like I want to fly the drones and stuff [for the Army], I don’t want to actually like fly myself but I definitely think the drone stuff will probably be good.” (George, personal communication, 2020)

While George expressed no interest in continuing his education outside of the military prior to or after viewing the website, he did concede that it might be useful to those seeking to continue their education but ultimately appeared indifferent towards using it personally. During the second PDSA cycle interview, we reviewed his RAISEC data which revealed that George scored highest in the realistic, investigative, and social categories. George expressed some doubt about the fit of social to his personality



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claiming “I am not a social person, I like to do stuff like on my own, I definitely don’t need nobody’s help with stuff” (George, personal communication, 2020). When it came to answering the last three questions of the survey around predictors of academic success, George answered “Neither agree nor disagree” for all three. He explained this during the second PDSA cycle interview, stating:

“I mean it like definitely probably depends on where I’m at and like what it is or what I’m doing and definitely who I’m with. I can’t really say one way or another when I don’t know probably what it’s about. I would need to like hear a specific thing to tell you definitely one way or another.” (George, personal communication, 2020)

### **Review of Findings**

As educational scholar-practitioners, we attempted to increase participants’ familiarization of post-secondary educational environments and processes thus increasing their reported interest in applying to postsecondary education. The interviews revealed the CEP participants lack of knowledge surrounding college due primarily to not having access to a college counselor in their CEP. There is an information deficit surrounding college information which adds additional barriers to disenfranchised youth which may desire to continue their education but just don’t know how to do that.

Throughout the interviews the common theme that emerged was uncertainty. The participants were uncertain about college, their futures and their life paths. Even the participants that claimed to know the path they wanted to take used words like probably and maybe often when describing their futures. This uncertainty emerged from a lack of knowledge and support. The participants didn’t have a thorough knowledge of the

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benefits of college, college life, how to apply to college, how to pay for college and how to navigate the financial aid system. Basically, because the participants had not had access to a college counselor in the CEP, they were uncertain of the entire process and if continuing their education was what was best for their individual circumstances. While the platform did alleviate some of the uncertainty surrounding post-secondary education, there is still much more to do.

The summative evaluation data partially confirmed the improvement theory as the respondents reported a greater understanding and familiarity with the college enrollment and financing process. However, respondents did not report an increase in familiarity with the college environment itself, and reports of interest in enrolling in postsecondary educational institutions did not increase as a result of studying the website. One participant did decide to enroll in a post-secondary educational institution but cited personal factors as the driving force behind the decision and not the website. This participant did state that the virtual platform was helpful in navigating the financial aid process. Additionally, participants of this initiative found the RAISEC questionnaire to be informative and self-reporting by respondents indicated that the participants were on career paths which they were well suited for. Only one respondent was surprised by one of the skill sets indicated yet shared “the other two were right and sound like me” (Howard, 2021). None of the respondents felt the need to change their paths based on the results of the RAISEC questionnaire.

The last three questions on the online Improvement Initiative Survey reflected the predictors of academic success. Within these questions, Barry scored himself as mostly “Agree”, Howard was primarily “Strongly Agree”, while George “Neither agree nor

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disagree”. These findings were discussed during the final interview. Only Howard seemed surprised when this data was explained.

### **Recommendations for Leadership Practice and Continued Scholarship**

As scholar-practitioners, we must also be reflective practitioners. We have to take the time to think about what we have done, what has happened, and how we can apply our learning. There were many lessons learned during this improvement initiative which can be utilized in our next steps towards sustainability. We learned about ourselves, our participants, educational systems and the world in which we live. These lessons will contribute to the growing body of research surrounding underrepresented students as well as help create a much needed level of support for CEP students.

### **Lessons Learned**

The intervention process has taught us the importance of flexibility and the ability to adapt to changes quickly. The only constant throughout this entire improvement initiative was change. The design of the intervention changed, the design team changed, the location of the intervention changed, the participants of the intervention changed, even the intervention itself changed. Despite all of these changes, the intent of the intervention or the problem of practice remained consistent. We sought to remove barriers to post-secondary education for CEP participants. While barriers were not removed completely for everyone, a tool was created that may help to lower some of those barriers.

Of the lessons learned during this improvement initiative; the most important lesson was how crucial college counselors are in all educational settings. College counselors are an essential element for guiding students to plan for their next steps. No

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matter what the setting, this is a support that should be provided to all students, which would be our first recommendation. The question becomes why are they not. We reject the idea that it is because of funding. Funding is always available for what is deemed a priority. Therefore, it must be concluded that college counselors are not a priority in CEPs because the students are not expected to go on to post-secondary education. These low expectations are another example of how the system is failing. Nonetheless, the lack of counselors does lead us to recommend other avenues to support all students. One suggestion is that CEPs partner with local high schools and create a schedule to share their college counselor. Perhaps one day a month the counselor is available to the CEP either in person or virtually for college and career planning purposes. At the least, this plan would give these students a point of contact. So many just need the opportunity to talk through the process with someone. The participants also need familiarization with the resources and options available to them. This very low level of support could be a life changing difference for some of the CEP students.

The improvement process has been both illuminating and disheartening. Before we embarked on this endeavor, there was an awareness of inequities in the educational system. This improvement project truly highlighted the limitations to access to powerful and life changing information. There is a systemic breakdown of who has access to what information. Historically, guidance counselors and family members have been the gatekeepers of this information. However, potential first-generation college students do not have family as a resource to fall back on and the increasing opportunity gap makes the possibility of overworked guidance counselors or worse yet no guidance counselors to provide the much-needed information an ever-growing reality. Aside from addressing

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resource gaps that contribute to the inherent inequities in the educational system, there must be something to fill the gap or it will continue to grow. Without a basic understanding of how to apply for financial aid or even information that it exists, that guidance counselors have historically provided, many students are in danger of disenfranchisement from the very institutions that they seek to attend.

The participant's self-reported lack of increased familiarity with post-secondary educational environments indicates what we had initially theorized. The virtual platform is a useful tool to increase CEP student's knowledge surrounding collegiate processes. The platform additionally proved to be a useful guide for CEP students navigating the enrollment and financial aid processes. The platform also provided a service for these students that had not previously existed. After reviewing the results, it appears that a full integrative experience in the physical college environment is still necessary for the type of familiarization that we were attempting to achieve.

As educational scholar-practitioners, we maintain that in addition to a college counselor, CEP students need to actually go onto the post-secondary campus and talk with teachers and other students, as Tinto's theory of integration states. CEP students need to see that college is accessible to them because they are no different than the students already attending. Many of the CEP students grow up too fast. The opportunity to have a college experience could be a time for them to slow down, learn about themselves, learn about what interests them and invest in their future.

Immersion into the college environment was the original intent of this improvement initiative. However, the occurrence of Covid-19 prohibited all in-person interactions and caused us to provide the intervention in a virtual setting to ensure the

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safety of all participants. While the platform did not provide the familiarization aspect that we desired, it does have potential to reach a wider demographic of potential college seeking students. The platform is also easy to utilize thus easing some of the difficulties navigating college enrollment for users that have no prior knowledge of the process. The platform additionally is cost effective and can be utilized in schools that do not have a college counselor or as a tool for college counselors to use. While this virtual platform did have positive results it is our belief that interest in college would have been increased by students taking classes on a college campus. Overall, the final improvement initiative was well received by those involved and the creation of the virtual platform was an avenue that would not have been explored had Covid-19 not occurred.

We recommend future studies focused on utilizing the website along with allowing CEP students to take classes twice a week on the college campus. This approach allows for the college counseling that CEP students may not have access to along with increasing exposure and familiarity with the post-secondary environment. It is the argument of these scholars that partnering these two avenues provides more support to CEP students than either one by itself. This combined approach would be a valuable area for further study.

Finally, these recommendations cannot be complete without revisiting the inequity in educational opportunities throughout the United States. Aguilar (2020) points out that, “The solution to educational inequity is not to help students navigate a dysfunctional system that was never designed for them” (p. 89). This improvement initiative only tries to place a band-aid over a gushing wound. The systems within education, from the allocation of resources to the segregation of various subgroups, need

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a major overall. If we plan to truly support historically underserved students and close the opportunity gap, educators need to reevaluate all aspects of the current systems.

### **Sustainability**

The next steps to sustain this initiative would be to make some improvements to the site. It would be beneficial to gain input and insights from a variety of organizations such as the National Association for the Advancement of Colored People, the Latin American Coalition, Mental Health America, etc. and gain more information with how the website can be altered to meet the needs of those historically underrepresented in post-secondary education. It would also be a priority to create translated versions of the site.

We would then work to share this virtual platform with schools that do not have a college counselor as well as various groups. This is no small endeavor but is one that is worthwhile. We would create a list of populations that this site could serve. For example, we would reach out to the NC Department of Health and Human Services who manages services for those in Foster Care. We could also market it to homeless shelters, American Indian reservations, and juvenile detention centers. Furthermore, we would explore making the site available not just to high school students but also to those in middle school providing even earlier exposure to college.

In order to promote this platform, we will need to put together a different type of design team than the one used in the creation of the platform. We will need to assemble a team that specializes in public relations to build partnerships with journalists in order to gain visibility through educational media outlets. Discussions with education bloggers and vloggers is an additional route to promote the platform that would require someone

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that is better acquainted with this type of media than us. Finally, it will be necessary to reach out to schools in historically underserved areas with the most likelihood of need to make them aware of the platform.

The website serves as a type of virtual counselor and fills a need that all schools should provide. The schools that usually do not deliver this service are behavior redirection schools and CEPs. These students are those that usually need an even higher level of counseling and support services; however, these services are not provided. We hope that the use of the platform will spread to any and all schools in need as well as provide disenfranchised students with the tools needed to continue their education.

Sustainability is the ability to maintain at a certain level. The website is a highly sustainable platform to support students with career and college planning. We will continue to make updates and improvements to the site as we collaborate with and gain feedback from stakeholders, such as students, college counselors and the organizations previously mentioned. Because the website is free there are no costs, other than time, associated with creating and sharing it. The virtual platform is much easier to use than our original plan of providing transportation to the community college, finding space to use within the college and managing everything that would be involved with that process. We also anticipate it being used more and more frequently as we market it, make it available in a Google search, and even via word of mouth. The website has the potential to reach a wide number and range of under-represented students as we work to market it.

### **Conclusion**

Through this improvement initiative, we investigated the impact of exposure to the college for students previously enrolled in a CEP. This study was a unique and rare



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look into a type of school that is often ignored and neglected by research as well as society. CEPs are traditionally without college planning counselors who provide an important service in the lives of youth. Very few of the participants in CEP schools go on to attend college or obtain advanced certifications. As scholar-practitioners, we sought to increase the pathways for these CEP participants to post-secondary education using Tinto's (1993) student integration theory. Tinto identified three reasons students leave post-secondary education, which are academic difficulties, the inability to set occupational goals, and a failure to become integrated into college (Nicoletti, 2019). Tinto's model states that students need integration into academic and social systems to be successful in post-secondary education (Tinto, 1993). Tinto's model suggests that dropout rates correlate with students' integration into an academic institution. This improvement initiative started the integration process by familiarizing participants with the college environment.

The theory of improvement maintained that exposing CEP participants to a college environment through a virtual platform would remove the individual barrier of unfamiliarity with the college environment, and more of these prior students would report wanting to attend college. This improvement initiative aimed to increase the understanding and familiarization of previously enrolled students with college. Our theory of improvement held that by increasing familiarization with the environment and the processes, these participants would be better equipped to continue their academic careers. To accomplish this goal, we exposed previously enrolled CEP participants to the college environment and the application process through an online platform.

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In order to provide exposure, we first had to build an online platform. We found a free web hosting service then proceeded to design and build a website to introduce and provide simplified explanations of the enrollment process as well as provide virtual exposure to a post-secondary educational environment. The participants were asked to review the website and then complete a survey pertaining to the usefulness of this site in helping them learn about college and their understanding of the processes involved. The participants were then interviewed to gain insights into their career and college aspirations. Through the exposure of these participants to the college environment through the virtual platform, we hoped to break down some of the barriers to post-secondary education.

It must be reiterated that the intervention methods of this disquisition changed significantly due to the unforeseen Covid-19 pandemic and the subsequent limitations on in-person interactions. The original intervention would have provided students with in-person exposure to the college environment, much like the dual enrollment program. To compensate, we created a virtual format to expose participants to the college environment. Although this approach was not ideal, there were benefits. It was much more cost-effective, easier to utilize, and potentially obtains a wider reach to more individuals. There were no costs involved in creating, maintaining, and sharing the website. The virtual platform is simple to use as we have worked to make it easy to understand and navigate. The website also has the potential to reach a wide range of under-represented students from across the country.

This improvement initiative taught us not only about barriers to college but also about barriers to improvement initiatives. As Maxwell (2017) explains projects do not

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always follow a clear and repeatable path. The external turbulence throughout this project primarily originated from the impact of the Covid-19 pandemic. Because of the pandemic, in-person learning came to a halt in most locations across the nation in March of 2020. The pandemic led to the loss of the intervention location, 100% participant mortality as well as illuminated all in-person contact. There was further external turbulence as the new interim Center Director of the CEP rescinded the authorization to conduct the study on site. Finally, Erica Vandermore, lost her position at the CEP due to the impacts of Covid-19. External turbulence is a part of life and should be expected as we continue our careers working towards improvement. Both are proud of the resilience and perseverance they were able to show as they worked through this improvement initiative.

The findings of this initiative have the potential to improve organizational structures surrounding how to better support historically underserved students and students who are underrepresented in post-secondary education. First and foremost, this work shines a light on the importance of college counselors and the need for them in all secondary school environments. If policy makers are able to understand the value and the support guidance counselors provide then they will prioritize funding for them. This study additionally allowed for a glimpse into what is possible if we “think outside of the box”. The restrictions of Covid-19 forced us to think divergently for creative solutions.

Creating virtual platforms to inform college planning is another way to empower all historically underrepresented students by providing them access to the knowledge and resources needed to continue their education. The improvement initiative also has the potential to impact a population of disenfranchised youth in a way that could be life-

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changing for them. There is very little research focused on the students of CEPs. We address the staggering statistics surrounding students in CEP school settings. During the 2018-2019 school year in CEP, only two out of over 150 of these students went on to pursue post-secondary education or advanced certification (CEP Reports, 2019). This study highlights the lost potential that we are experiencing within this population. These are bright, funny, energetic young men and women. They deserve our high expectations, and they deserve to know that we will not give up on them. This improvement initiative shows how society is falling short on both accords. Advanced certification(s), an associate's degree, an undergraduate degree, a graduate degree, and/or just the experience of taking a few college courses could be a life-changing experience. CEP students deserve at least the choice.

This improvement initiative explored how students' increased familiarization with the college environment, along with discussions around future planning, can break down barriers to post-secondary education. This study began by utilizing Tinto's theory of integration to better support CEP students. However, it ended with powerful conversations with three young men impacted by a lack of service and support from their educational system. By implementing this theory of improvement, we found that a virtual platform can make post-secondary education somewhat more accessible to CEP students; however, the integration into the college environment may still be an integral factor.

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### Appendix A

#### Improvement Initiative Survey

I like to work on cars. (R)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like to do puzzles. (I)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like to read about art and music. (A)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like to work in teams. (S)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I set high goals for myself. (E)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like to organize things. (C)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like to build things. (R)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like to figure out how things work. (I)				



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Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like creative writing. (A)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like to learn about others. (S)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like selling things. (E)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like working in an office. (C)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I adjust easily to big changes. (Biodata)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I like to learn more about things that interest me. (Biodata)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I can accomplish something difficult if I set my mind to it. (Biodata)				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

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## Appendix B

Original RIASEC Text Used to Create the Improvement Initiative Survey  
Reproduced from: Open-Source Psychometrics Project, 2019

### Which Career Pathway is right for you?

## THE RIASEC TEST

Follow these easy steps to see where your interests are.

1 Read each statement. If you agree with the statement, fill in the circle. There are no wrong answers!

How often statements apply to you (circle the number that best describes you)						How often statements apply to you (circle the number that best describes you)					
1	2	3	4	5	6	1	2	3	4	5	6
1. I like to work on cars											
2. I like to do puzzles											
3. I am good at working independently											
4. I like to work in teams											
5. I am an ambitious person, I set goals for myself											
6. I like to organize things, (files, desks/offices)											
7. I like to build things											
8. I like to read about art and music											
9. I like to have clear instructions to follow											
10. I like to try to influence or persuade people											
11. I like to do experiments											
12. I like to teach or train people											
13. I like trying to help people solve their problems											
14. I like to take care of animals											
15. I wouldn't mind working 8 hours per day in an office											
16. I like selling things											
17. I enjoy creative writing											
18. I enjoy science											
19. I am quick to take on new responsibilities											
20. I am interested in healing people											
21. I enjoy trying to figure out how things work											
<b>Total</b>						<b>Total</b>					
R I A S E C						R I A S E C					

2 Add up the number of filled in circles in each column and then add the two columns together for a grand total.

③ Using your grand total scores from above, transfer the scores for each letter into the appropriate column below.

<b>R</b>	= Realistic	Total: _____
<b>I</b>	= Investigative	Total: _____
<b>A</b>	= Artistic	Total: _____
<b>S</b>	= Social	Total: _____
<b>E</b>	= Enterprising	Total: _____
<b>C</b>	= Conventional	Total: _____

3 Take the three letters with the highest scores and record them under "My Interest Code".

MY INTEREST CODE

5 Turn the page to see what this means!

# BREAKING DOWN BARRIERS TO COLLEGE

## Appendix C

### WESTERN CAROLINA UNIVERSITY CONSENT FORM FOR RESEARCH PARTICIPATION

**Study Title: Breaking Down Barriers to Post-Secondary Education for Job Corps Students**

**Principal Investigator: Erica Vandermore & Amy Wagner**

**IRB Study Number: 1630205-1**

We are students at Western Carolina University, in the Department of Educational Leadership. We are planning to conduct a research study, which we invite you to take part in. This form has important information about the reason for doing this study, what we will ask you to do if you decide to be in this study, and the way we would like to use information about you if you choose to be in the study.

#### **Why are you doing this study?**

You are being asked to participate in a research study about enrollment in college.

#### **What will I do if I choose to be in this study?**

In early October, you will be asked to view a website dedicated to easing the college application and admissions process. Viewing the website will take approximately 40 minutes. After viewing you will be asked to complete a 15 minute survey regarding the usefulness and usability of the website. You will additionally be given the opportunity to provide any feedback you deem useful in a 15 minute follow up interview if you would like. The interview will be a recorded phone call.

In early December, you will again be asked to review the website again. It will take approximately 40 minutes to review it the second time. You will again complete a 15 minute survey followed by an optional 15 minute recorded interview over the phone.

**Study time:** The study will be conducted over 14 weeks for a total of two website reviews, two surveys, and two optional interviews. The entire study participation will be approximately 3 hours.

**Study location:** All study procedures will take place via a secure connection on the internet and surveys will be conducted through Qualtrics.

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### **What are the possible risks or discomforts?**

Your participation in this study does not involve any physical or emotional risk to you beyond that of everyday life.

As with all research, there is a chance that the confidentiality of the information we collect from you could be breached – we will take steps to minimize this risk, as discussed in more detail below in this form.

### **What are the possible benefits for me or others?**

Participation in this study has the possibility of easing the transition into college. The study results may be used to help other people in the future.

### **How will you protect the information you collect about me, and how will that information be shared?**

We will collect your information through recordings, interviews and qualtrics surveys. This information will be stored in a restricted access folder additionally, any hard copy materials containing personal information will be stored in a locked office cabinet for a duration of 3 years. A coding system including pseudonyms will be used to further protect the confidentiality of participants. Any code key used to identify participants will be stored separately from data collected in a separate restricted access folder.

The data collected in this research study will be kept confidential. Participation in research may involve some loss of privacy. We will do our best to make sure that the information about you is kept confidential, but we cannot guarantee total confidentiality. Your personal information may be viewed by individuals involved in the research and may be seen by people including those collaborating, funding, and regulating the study. We will share only the minimum necessary information in order to conduct the research. Your personal information may also be given out if required by law, such as pursuant to a court order. While the information and data resulting from this study may be presented at scientific meetings or published in a scientific journal, your name or other personal information will not be revealed.

### **Electronic Surveys**

The research team will work to protect your data to the extent permitted by technology. It is possible, although unlikely, that an unauthorized individual could gain access to your responses because you are responding online. This risk is similar to your everyday use of the internet.

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### **Group Data**

We will request that all participants respect the confidentiality of the group and do not share any other participant's responses outside of the group. However, we cannot guarantee your privacy or confidentiality because there is always the possibility that another member of the group could share what was said. Pseudonyms will be assigned to each participant, and during the course of the interview and in all notes, you will only be referred to by your pseudonym.

### **Audio Recordings**

Audio Recordings may be collected during this study and used to gather details regarding the website beyond what was described in the survey. The recordings will be destroyed May 1, 2021. The recordings will not be shared with the general public or other researchers. You do have to agree to be recorded in order to participate in the possible follow up interview.

### **Direct Quotes**

If you give the research team permission to quote you directly, the researchers will give you a pseudonym and will generalize your quote to remove any information that could be personally identifying.

### **Financial Information**

Participation in this study will involve no cost to you. You will not be paid for participating in this study.

### **What are my rights as a research participant?**

Participation in this study is voluntary. You do not have to answer any questions you do not want to answer. If at any time and for any reason, you would prefer not to participate in this study, please feel free not to. If at any time you would like to stop participating, please tell me. We can take a break, stop and continue at a later date, or stop altogether. You may withdraw from this study at any time, and you will not be penalized in any way for deciding to stop participation.

If you decide to withdraw from this study, the researchers will ask you if the information already collected from you can be used.

### **Who can I contact if I have questions or concerns about this research study?**

## BREAKING DOWN BARRIERS TO COLLEGE

If you have questions, you are free to ask them now. If you have questions later, you may contact the researchers at:

Erica Vandermore, 312-330-1849, elvandermore1@catamount.wcu.edu

Amy Wagner, 704-299-6762, aewagner2@catamount.wcu.edu

If you have questions or concerns about your treatment as a participant in this study, you may contact the Western Carolina University Institutional Review Board through the Office of Research Administration by calling 828-227-7212 or emailing irb@wcu.edu. All reports or correspondence will be kept confidential to the extent possible.

You will be given a copy of this information to keep for your records.

### **Consent**

I have read this form and the research study has been explained to me. I have been given the opportunity to ask questions and my questions have been answered. If I have additional questions, I have been told whom to contact. I agree to participate in the research study described above and will receive a copy of this consent form.

---

Participant's Name (printed)

---

Participant's Signature

I do ☐ or do not ☐ give my permission to the investigators to quote me directly in their research.

The investigators may ☐ or may not ☐ digitally record this interview.

Participant Name (printed):


---

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# BREAKING DOWN BARRIERS TO COLLEGE

## Appendix D

### Website Review Survey



The website was easy to understand.

☐ Strongly Disagree    ☐ Disagree    ☐ Neither agree nor disagree    ☐ Agree    ☐ Strongly Agree

I learned more about college on this website.

☐ Strongly Disagree    ☐ Disagree    ☐ Neither agree nor disagree    ☐ Agree    ☐ Strongly Agree

I learned more about financial aid on this website.

☐ Strongly Disagree    ☐ Disagree    ☐ Neither agree nor disagree    ☐ Agree    ☐ Strongly Agree

I learned more about programs that could benefit me on this website.

☐ Strongly Disagree    ☐ Disagree    ☐ Neither agree nor disagree    ☐ Agree    ☐ Strongly Agree

After reviewing this website, I am thinking about applying to college.

☐ Strongly Disagree    ☐ Disagree    ☐ Neither agree nor disagree    ☐ Agree    ☐ Strongly Agree

Share what you liked about the website.

What did you learn from the website that you didn't already know (if anything)?

How could the website be improved?

What would you like to learn more about?

Is it okay to contact you with any follow up questions?

☐ Yes

☐ No

# BREAKING DOWN BARRIERS TO COLLEGE

## Appendix E

### Website Images

